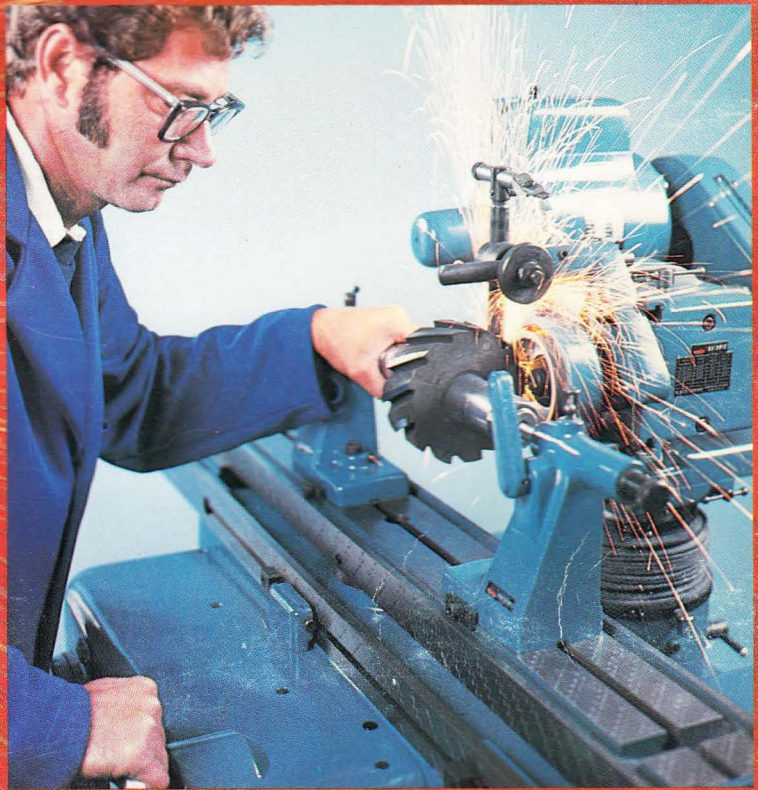
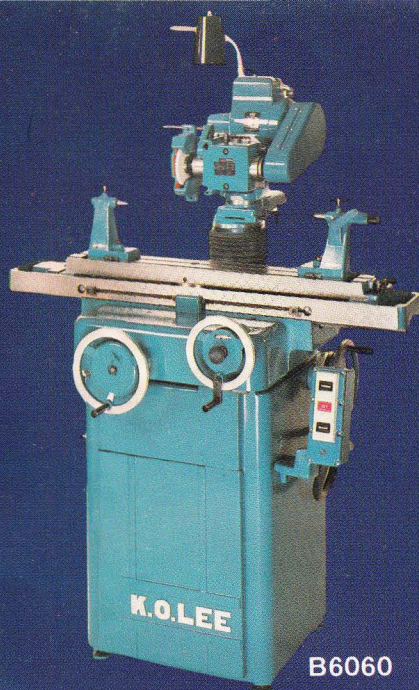


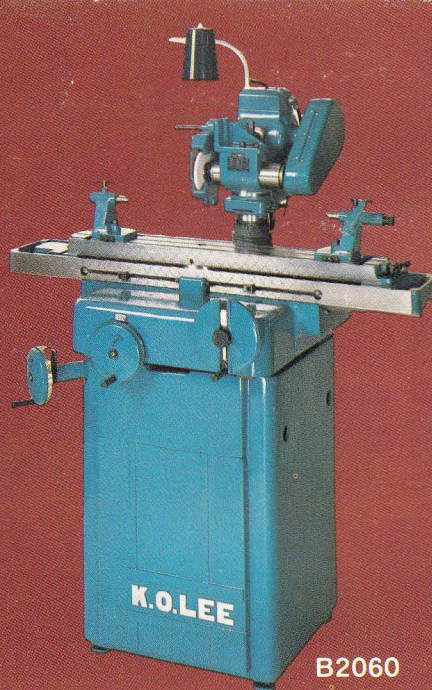
The Solid Value Line of
**UNIVERSAL
TOOL & CUTTER
GRINDERS**



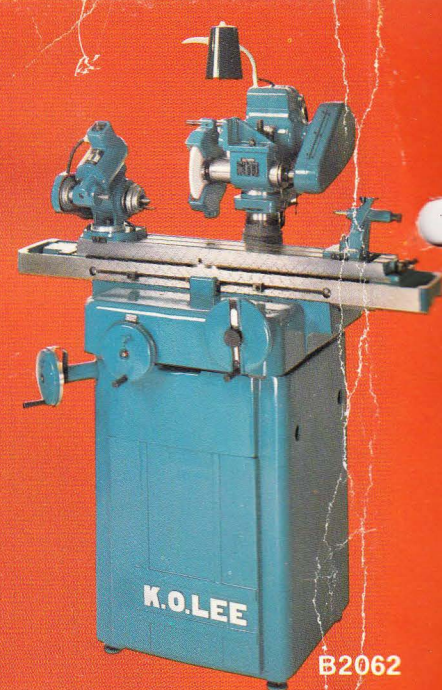
K.O. LEE



B6060



B2060



B2062

THE SOLID-VALUE LINE. THE KIND

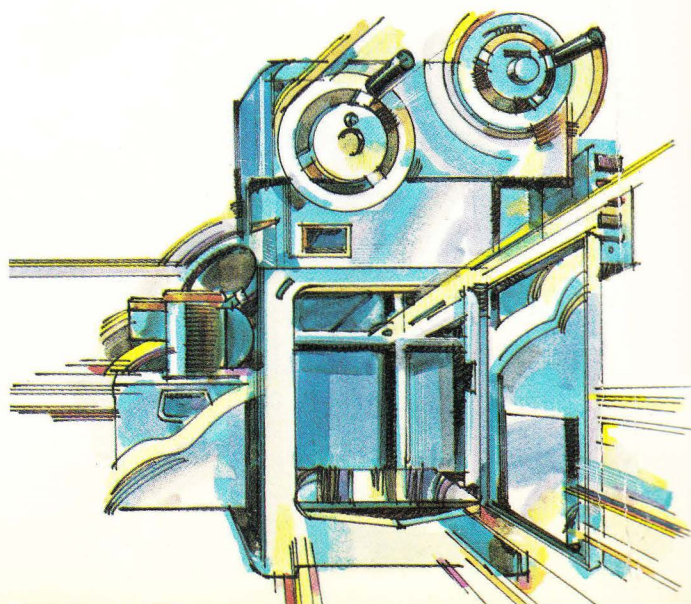
Table of Contents

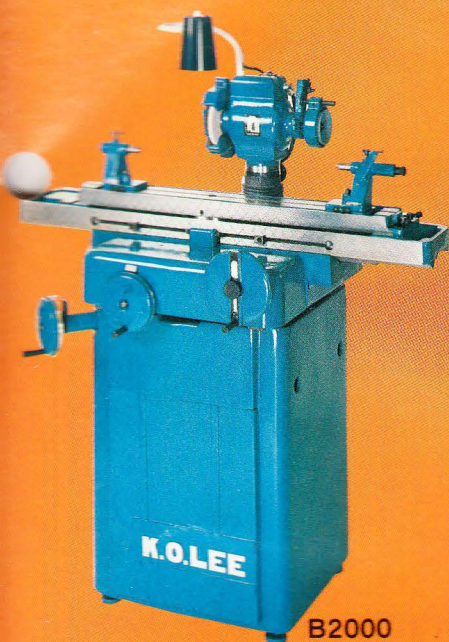
	Page
The Solid Value-Line	2
General Specifications	5
Grinder Features	7
Dakota Series	8
Universal Grinding Heads (Dakota)	10
Standard Equipment (Dakota)	11
Rushmore Series	12
Aberdeen Series	14
Plainsman Series	16
Universal Grinding Heads	18
(Rushmore, Aberdeen, Plainsman)	
Standard Equipment	19
(Rushmore, Aberdeen, Plainsman)	
Grinding Head Equipment	
Dakota	20
Rushmore, Aberdeen, Plainsman	21
Hydraulic Powered Table Traverse	22
Leematic Programmable Indexer	23
Dust Collector B975	24
Coolant Attachments	25
Dimensions	26
Applications	26
How to Order	28
Optional Fixtures	29
Warranty	29
The K.O. Lee Tradition	30

The Most Extensive Line
of Precision Tool Room
Grinders and Small Production
Grinders Manufactured in the
United States.

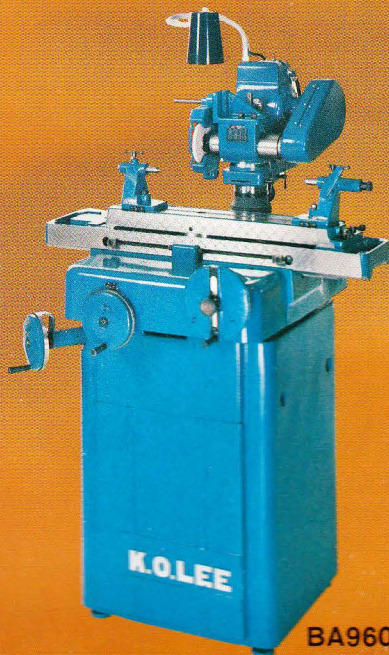
When you combine true machine tool
quality with a reasonable price . . .
you have what K.O. Lee customers
call **SOLID VALUE**.

Solid Value in Tool Room Grinders
didn't happen overnight.

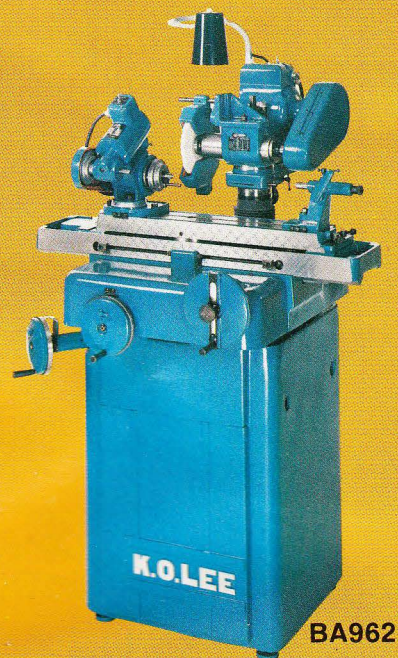




B2000



BA960



BA962

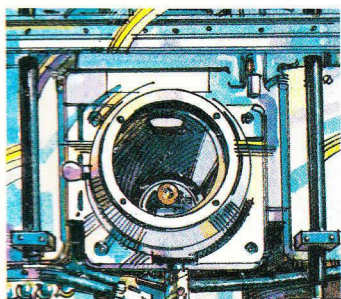
OF GRINDER YOU WANT AT THE PRICE

K.O. Lee has been designing, building, improving tool and cutter grinders for over 40 years, and has a company history going back to 1886.

Under steady development, our original A600 machine has mushroomed into a line of over 40 models!

Today, these precision machines

are a source of pride and productivity in thousands of shops... from the smallest job shop to the largest manufacturing plants.



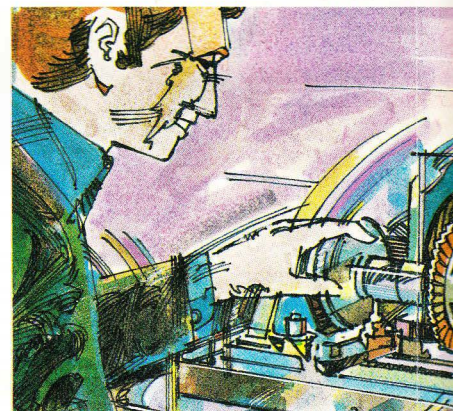
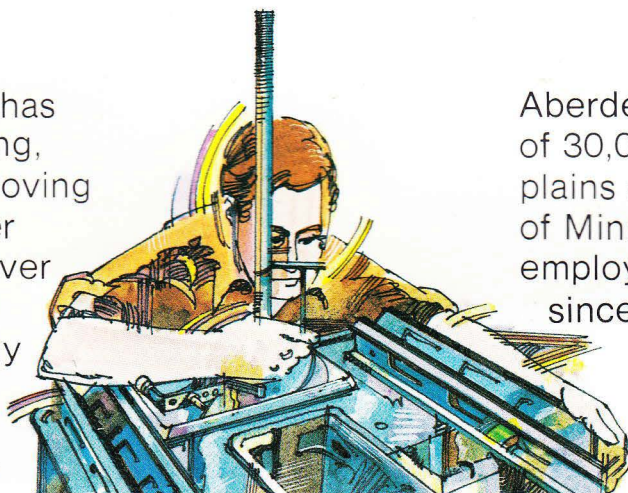
K.O. Lee Grinders are built in a large modern plant in

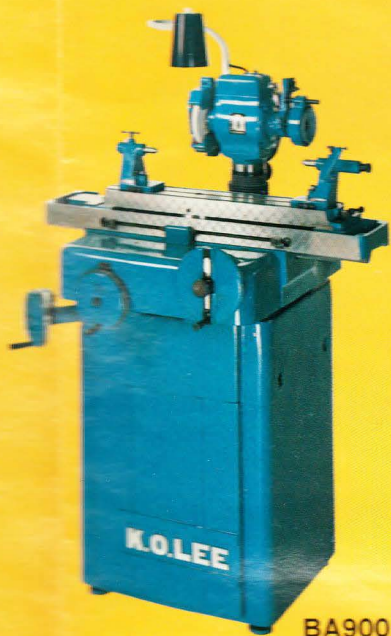
Aberdeen, South Dakota... a city of 30,000 people on the wind-swept plains up north, nearly 300 miles west of Minneapolis. Many of the 180 employees have been with the company since the start of their apprenticeship.

This is a family business. Managed by the third generation of the Lee family. And family pride, along

with the loyalty, skills and determination of people from the community, have more than a little to do with K.O. Lee quality.

The solid cast iron base has long been a symbol of the K.O. Lee way of doing things. Nothing skimpy here. The walls are thick, with heavy reinforced inner ribs.

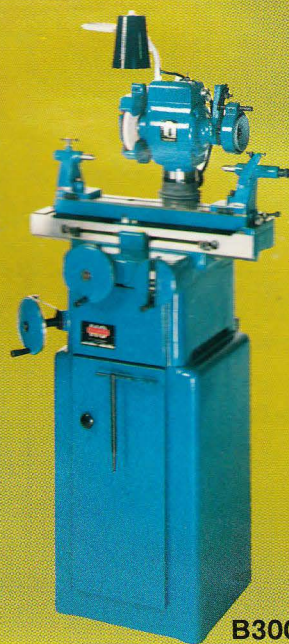




BA900



B360



B300



B300X

PRICE YOU WANT !

This stable, rigid base provides a foundation that maintains the accuracy of the table and saddle, absorbs vibration and assures the long life for the grinder and its accessories.

K.O. Lee Solid Value doesn't stop with the machine. It goes right on into the most extensive line of workheads, tooling, and accessories available in the industry.

These workholding fixtures add greatly to the versatility and usefulness of all K.O. Lee Grinders. They equip the machines for sharpening the complete scope

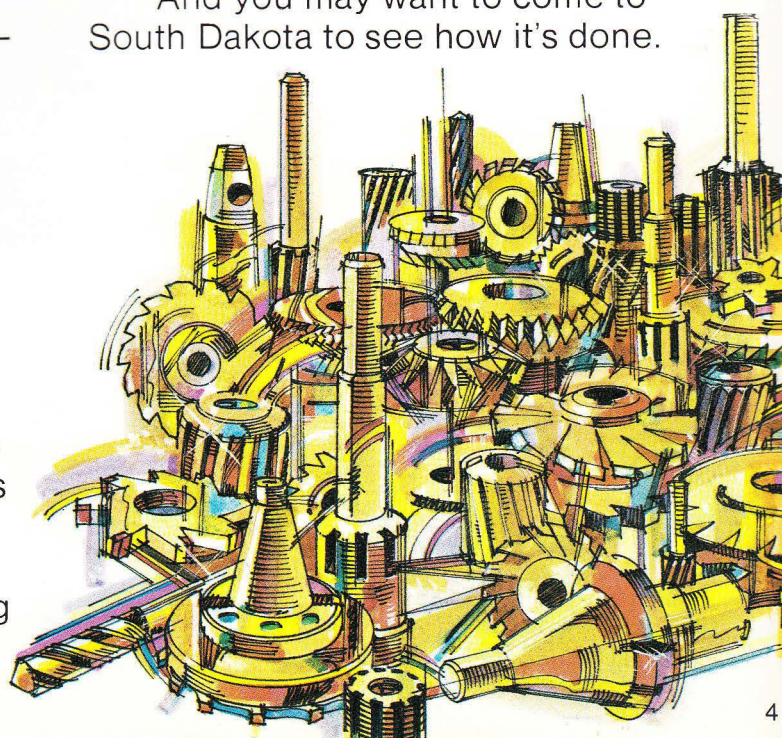
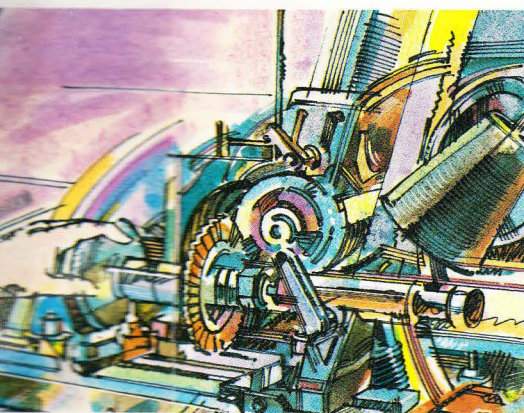
of complex cutting tools used in today's modern machine shop. They also extend the range of the machine to handle close tolerance internal grinding

and external cylindrical grinding jobs.

From the big premium K.O. Lee DAKOTA Grinder . . . right on through the line to the PLAINSMAN Tool and Cutter Grinder . . . Solid-Value quality is there in every detail.

Compare K.O. Lee design, workmanship, versatility, accessories, prices. You'll find Solid Value, too.

And you may want to come to South Dakota to see how it's done.

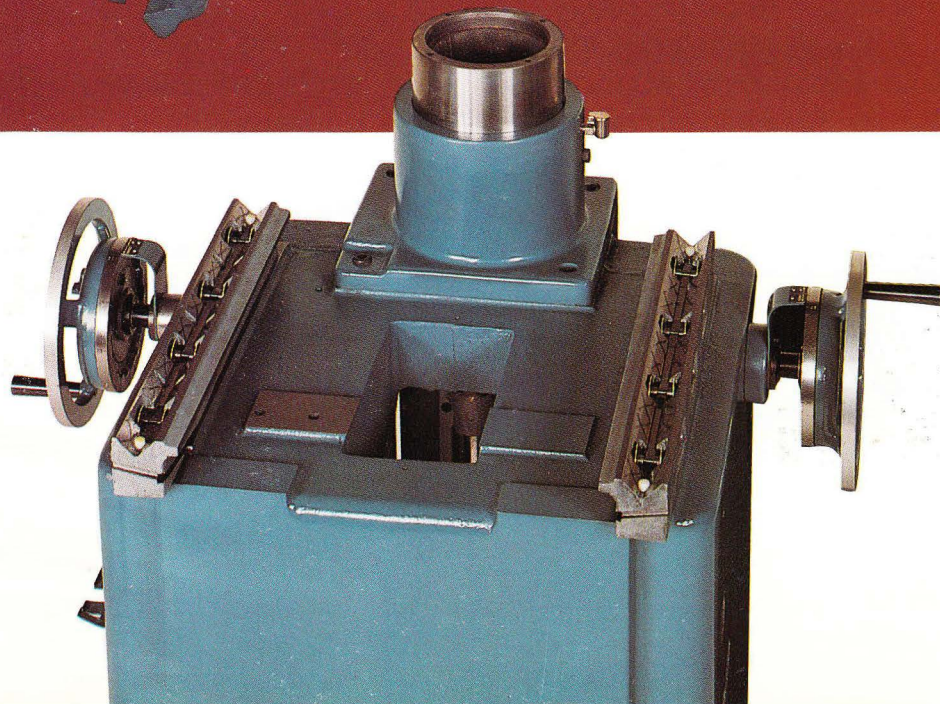
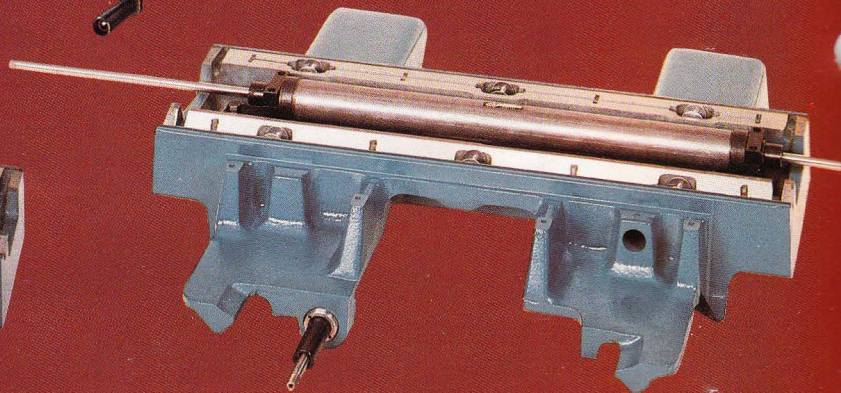
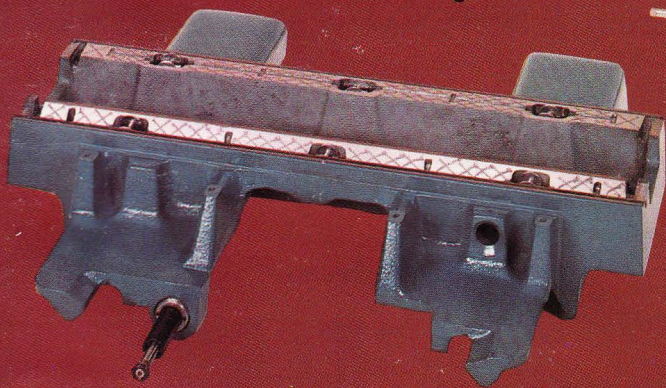
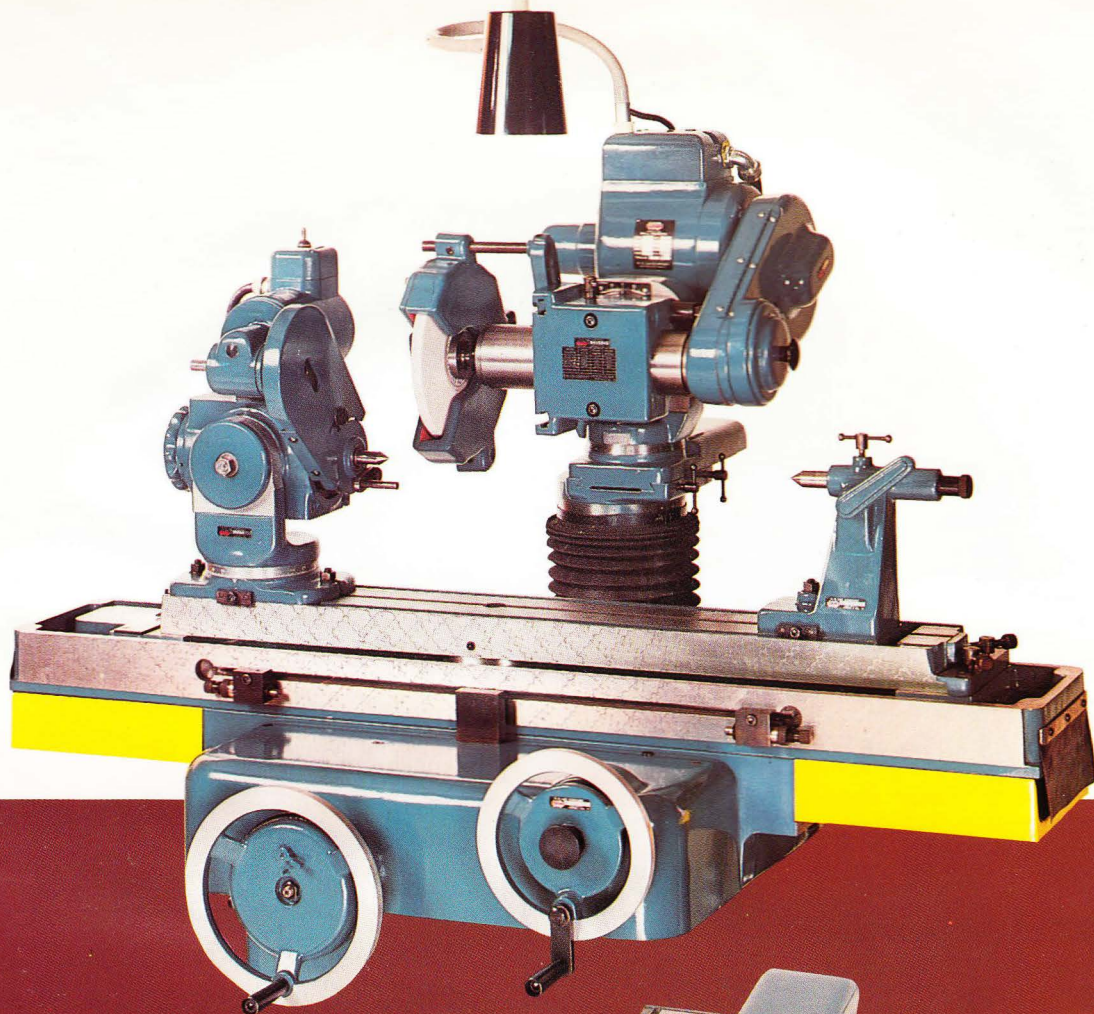


General Specifications

Universal Tool and Cutter Grinders have either a High Speed Standard Spindle (B360, BA960, B2060, B6060) or a Heavy Duty Spindle (BA962, B2062 and B6062).

Tool and Cutter Grinders and Basic Tool Grinders have a Single Speed Motorized Spindle (Models B300, BA900, B2000, B300X, BA900X, and B2000X).

	Dakota		Rushmore			Aberdeen			Plainsman	
	B6060	B6062	B2060	B2062	B2000	BA960	BA962	BA900	B360	B300
1. Distance between Tailstocks	32"		32"			22"			17"	
2. Distance between Centers in Workhead and Tailstock	B6043 26" B9043 24"		26"			16"			11"	
3. Distance between Collet in Workhead and Tailstock	B6043 27" B9043 25"		27"			17"			12"	
4. Distance between B946 Chuck Face and Tailstock (1" hole through chuck)	B6043 25½" B9043 23½"		25½"			15½"			10½"	
5. Table Working Surface	5¼" x 37¼"		5¼" x 37¼"			5¼" x 27¼"			3⅝" x 22½"	
6. Sub Table	8" x 48"		8" x 48"			8" x 38"			6⅝" x 26¼"	
7. Total Crossfeed Movement Feed per Revolution of Handwheel (.001 Grad.)	8" .100"		7¼" .100"			7¼" .100"			4¾" .100"	
8. Table Traverse Fast Feed per Revolution of Handwheel Slow Feed per Revolution of Handwheel Ratio—Fast:Slow	20" 2⅜" ⅞" 5:1		20" 2⅜" ⅞" 5:1			14" 2⅜" ⅞" 5:1			10" 2¾" 1⅝" 3:1	
9. Vertical Movement of Column Feed per Revolution of Handwheel (.001 Grad.)	10½" .050"		7" .040"			7" .040"			7" .040"	
10. Column Diameter	6"		4"			4"			4"	
11. Swing Over Table (1" and 2" Raising Blocks Available)	12¼"		8¼"			8¼"			8¼"	
12. Minimum Distance Centerline of Wheel Shaft to Top of Table	5⅝"		3¾"			3¾"			3¾"	
13. Maximum Distance Centerline of Wheel Shaft to Top of Table	15¼"		10¾"			10¾"			10¾"	
14. Maximum Distance from Column to Outside of Straight Wheel; Dovetail Slide not Extended, Spindle 90° to Table	4⅝"	6⅝"	3¾"	4½"	4⅝"	3¾"	4½"	4⅝"	3¾"	4⅝"
15. Maximum Distance from Column to Outside of Straight Wheel; Dovetail Slide Extended, Spindle 90° to Table	9¾"	11½"	9⅝"	10⅝"	—	9⅝"	10⅝"	—	9⅝"	—
16. Centerline Height of Fixtures to Top of Table	6.130"		4.130"			4.130"			4.130"	
17. Table T-Slot	⅞"		⅞"			⅞"			⅞"	
18. Table Swivels (Calibration: 3" per ft., 15° either side of center)	225°		225°			225°			225°	
19. Wheel Head Swivel	360°		360°			360°			360°	
20. Motor Speed RPM Spindle Speed Range (High Speed Grinders) Spindle Speed Range (Heavy Duty Grinders)	3450 3450-17250 2840-5330		3450 3450-18400 1150-7760			3450 3450-18400 1150-7760			3450 3450-18400 —	
21. Maximum I.D. Depth. Hole Size ⅝" to 2" Capacity with Standard Arbors	1¼"	3½"	1¼"	2¾"	—	1¼"	2¾"	—	1¼"	—
22. Maximum Crossfeed Surface Grinding High Speed Grinders (5" Wheel) Heavy Duty Grinders (8" Wheel) Tool Grinders (6" Wheel) With S1055CR Quill (7" Wheel)	3"	— 5"	2¾"	— 4¼"	— 4⅝"	2¾"	— 4¼"	— 4⅝"	2¾"	— 4⅝"
23. Grinding Wheel Hole Size	⅝"	1¼"	⅝"	1¼"	⅝"	⅝"	1¼"	⅝"	⅝"	⅝"
24. Net Weight (Pounds)	1280		1180	1120		1140	1080		560	510

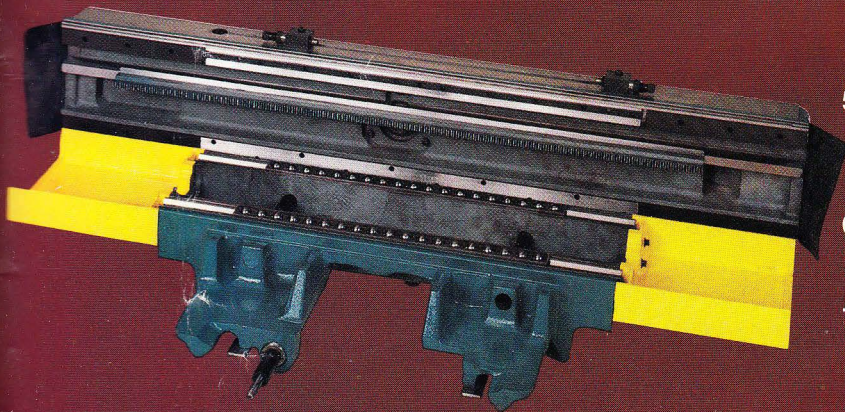


K.O. Lee Solid Value Grinder Features

- Universal grinders have belt driven cartridge spindles with ball bearings grease-sealed for long life. Replacement time is minimized for changing or servicing.
- Tool and Cutter and Basic Grinders have a totally enclosed ball bearing specially balanced motorized grinding wheel spindle. It's convenient to use and swivels 360°.
- Flexible machine light to spotlight the work.
- Interchangeable centers are used—quickly exchanged for carbide centers or replaced.
- Handwheels for crossfeed, table traverse and vertical movement located for maximum operator convenience. Table travel handwheels have extension handles.
- Coolant trough is built into subtable—returns coolant to tank when flood coolant is ordered.
- Reversing switch conveniently located near motor (except on Dakota Models, and machines equipped with special controls).
- Rear handwheels are available for those who are

- used to back-operated tool grinders. Rear crossfeed and table controls are standard on Dakota and Rushmore series Ball-Track models. Rear elevation and crossfeed are available on Aberdeen and Rushmore series. Rear table travel controls only on 'Ball Track' series.
- Swivel table taper adjustment screws provide positive fixed settings with center or table end lock screws.
- Adjustable table stops to prevent overstroking on cutter blades and for grinding to shoulders. Ball-track machines have B911 spring-loaded stops with micrometer built in.
- Floating bronze feed nut with easy back-lash adjustment provides sensitive "feel" and repeatability.
- Super smooth 'Poly-V' belt-driven spindles (Universal models) mean plenty of pulling power with minimum belt tension... so motors, spindles and belts wear longer.
- OSHA wheel and belt guards are standard equipment.

1. Models with Ball-Track, anti-friction ways have steel balls in tool steel V and flat ways-table and saddle. Balls rolling thru oil are self-cleaning. Protective extensions prevent dust from entering way areas.
2. All shafts and crossfeed screws are ball bearing mounted at points of radial thrust for long life

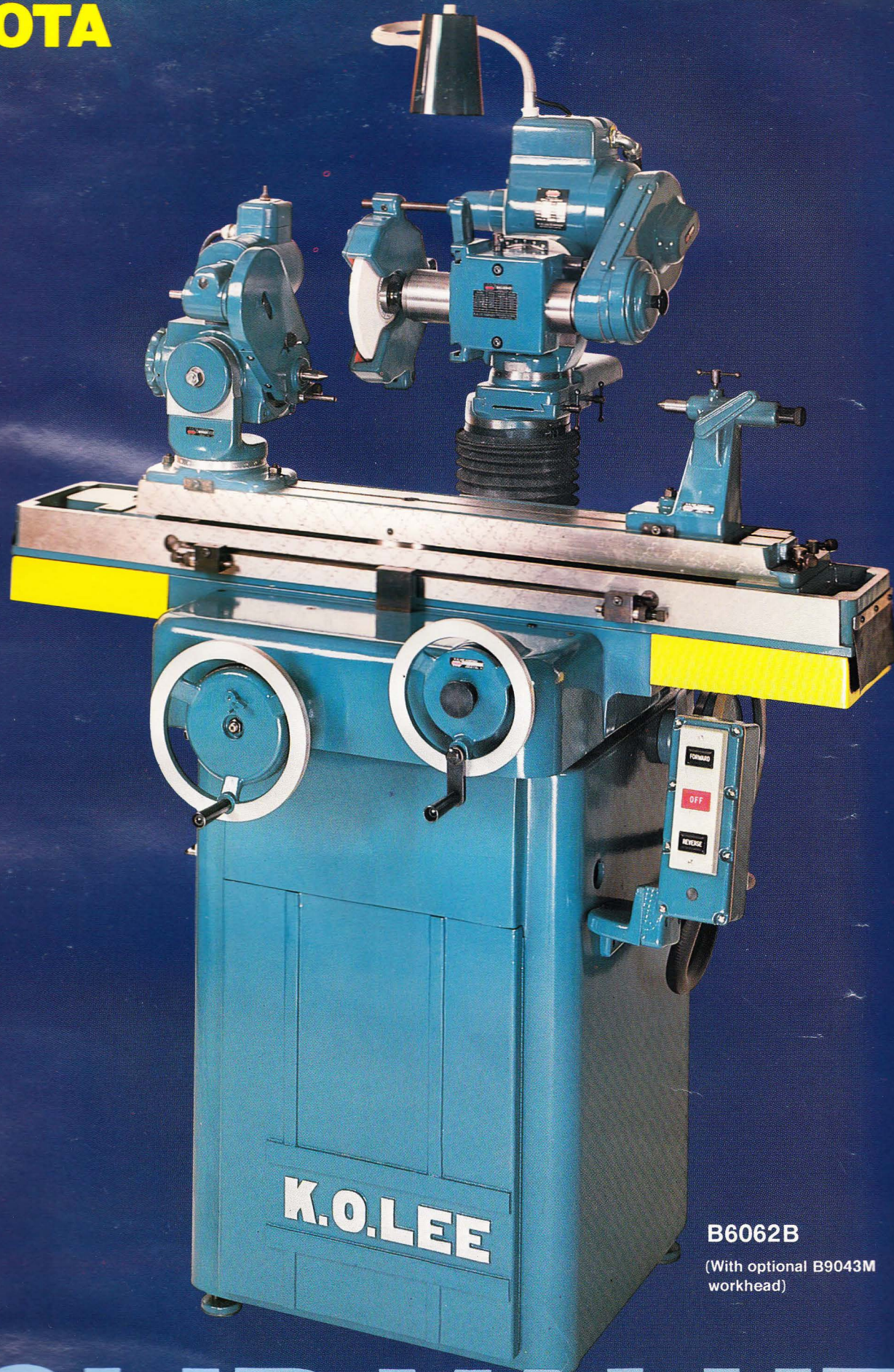


- and smooth operation. Main feed screws are hardened and ground to Acme thread standards.
3. Two-speed table transmission for fast or slow table traverse.
4. Saddle cross-ways, are double 'V' for maximum tracking stability. Fully protected by integral or cast shrouds. They are long enough so corresponding base ways are not uncovered. Saddle lock provides fixed saddle position when required. (Except Plainsman Series.)
5. Spool roller lubrication is automatic and built-in. These reservoirs in the table and baseways hold way lube or hydraulic oil to assure constant lubrication whenever the table or saddle is moved.
6. Standard longitudinal ways are traditional 'V' and flat for parallel accuracy—ground and cross-scraped for even lubrication distribution.
7. Ball Track models feature a spring-loaded roller hold-down for the table, with uniform spring tension for easy table control.

- Column center-screw construction assures accurate column tracking and minimum key-way guide pressure. Screw rests on Ball or Roller bearings.
- Column is protected with telescoping neoprene boot.
- One-piece cast iron base assures rigidity for a lifetime... absorbs grinding vibration better than other materials.
- Storage compartment in base for fixtures and tools.
- Machine bases have four-pad floor contact, with leveling bolts for maximum stability. Plainsman series use 3-point integral pads.

DAKOTA

K.O. LEE UNIVERSAL GRINDERS



B6062B

(With optional B9043M
workhead)

SOLID VALUE

The Dakota

The master universal grinder in the K.O. Lee line. Bigger. Heavier. Greater capacity and more versatile.

Designed for shops that have sizeable cutting tools and considerable work for cylindrical tool or production grinding. The Dakota can be tooled to fill a variety of requirements throughout the year, eliminating the need for costly single-purpose grinders. The Dakota will match any large Universal machine of similar capacity as a prestige tool room grinder in finish, accuracy, and ease of operation. Yet it will cost you a lot less.

The capacity of the Dakota Universal Grinder series is the largest of all K.O. Lee machines. Comparative specifications are listed on page 5 and general features on page 7, 10, and 11. Here are the design parameters of this series which make it capable of performing virtually all tool room and production grinding tasks. —

Features

- Highest headstock and tailstock centerheight with standard swing of 12¼".

Dakota Model B6062H hydraulic universal grinder with optional variable speed Motor-Driven Workhead B10043M, and optional Coolant Attachment B6035-15HD, illustrating a production set-up for a cylindrical grinding operation.

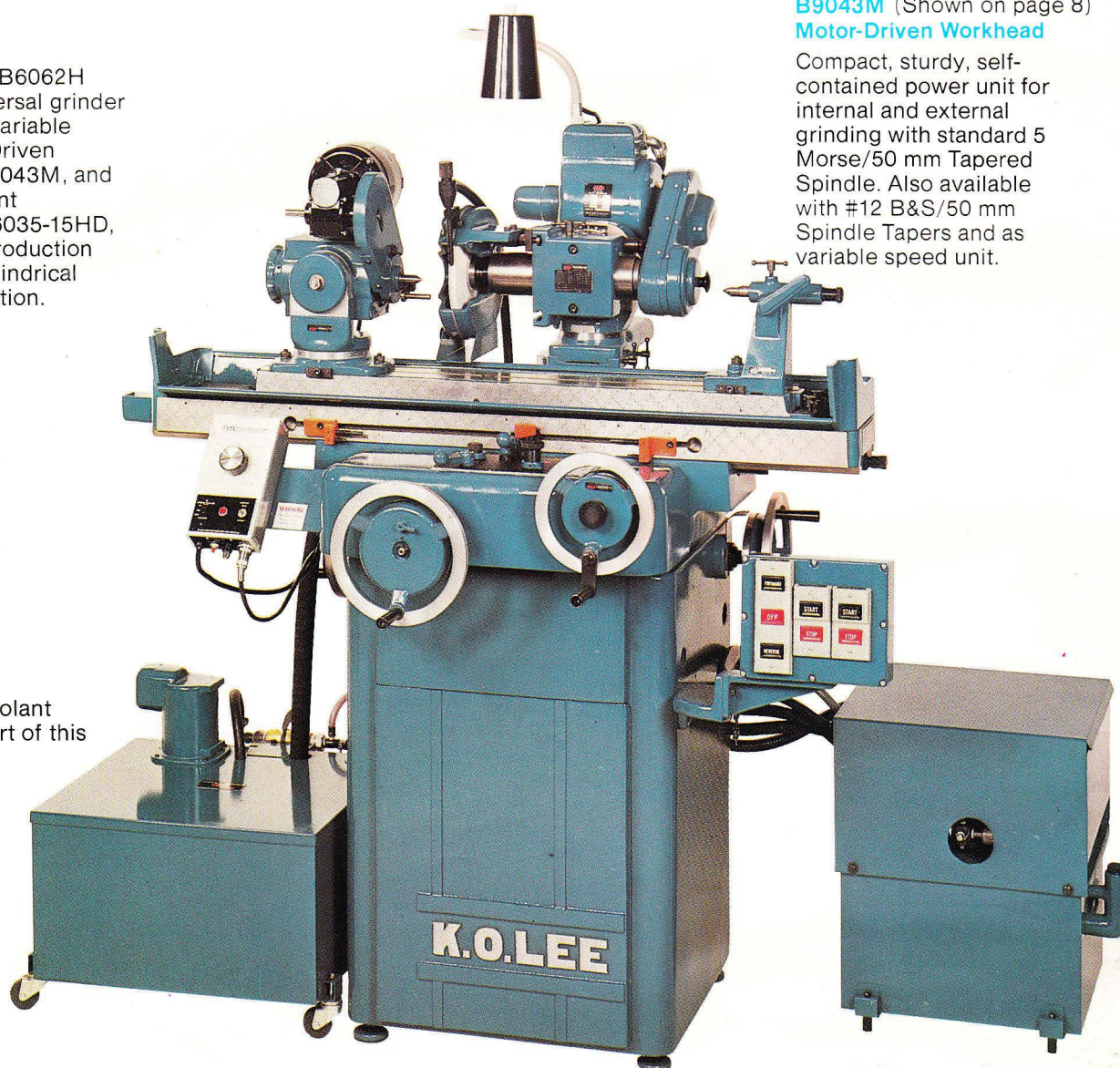
B6035-15HD

A 15 gallon coolant reservoir is part of this accessory.

- A big 6" column with a vertical range of 10½" when raised from the lowest position by a handwheel on either side of the machine. Heavy column housing in base provides full support throughout entire elevation range. (See construction, page 11.)
- Wheelhead horizontal swivel is locked by simple turn of a locking screw. Column elevation is fixed by column lock screw.
- All Dakota series grinders are furnished with multi-speed grinding heads.
- Tilting grinding head—22° either side of vertical provides ability to produce clearance angles with the grinding wheel quickly, as soon as cutters have been placed on center. (See p. 11, illustration.)
- Greatest crossfeed range: 8".
- Largest capacity standard equipment for use with large cutters and other work.
- Open style spoke handwheels make it easier to move table, saddle and column short increments accurately.
- Heavy duty workholding fixtures are available where necessary, but our standard fixtures for other model series are adapted to this machine. Consult our Solid-Value Fixture and Accessory catalog for more details.

B9043M (Shown on page 8) Motor-Driven Workhead

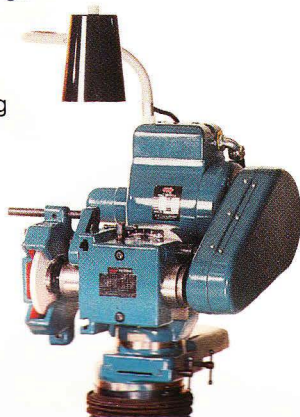
Compact, sturdy, self-contained power unit for internal and external grinding with standard 5 Morse/50 mm Tapered Spindle. Also available with #12 B&S/50 mm Spindle Tapers and as variable speed unit.



Universal Grinding Heads

Dakota High Speed B6055 Universal grinding head features:

- 1 Hp. totally enclosed ball-bearing balanced motor.
- Highspeed cartridge spindle has precision, class 7 long life grease-sealed bearings.
- All pulleys and wheel arbors are self-centering on taper lock shafts.



B6060 Speed Chart

Diameter of Wheel	Wheel R.P.M.	Pulley Motor	Pulley on Spindle	Belt Used
6 to 5	3,450	2 3/4	2 3/4	5M710
5 to 4	4,390	3 1/2	2 3/4	5M710
4 to 3	5,330	4 1/4	2 3/4	5M750
3 to 2	7,330	4 1/4	2	5M750
2 to 1 1/2	10,780	6 1/4	2	5M800
1 1/2 to 3/4	14,380	6 1/4	1 1/2	5M775
3/4 to 1/2	17,250	6 1/4	1 1/4	5M775

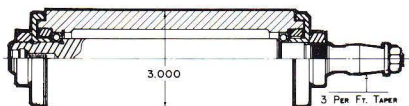
Accessories

See page 20.



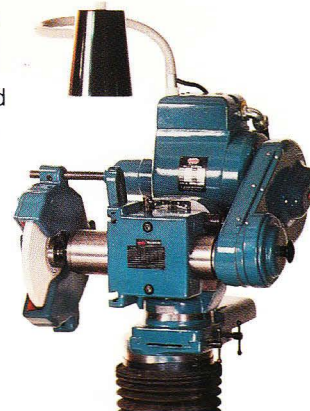
Quill Assembly B6055A

Quill Assembly drawing showing bearing detail.



Dakota Heavy Duty B6055HD Universal grinding head features:

- 1 Hp. totally enclosed ball-bearing balanced motor (2 Hp., 3 Hp. available).
- Heavy duty cartridge spindle with 2 sets of duplex precision, class 7 bearings grease-sealed for long life.
- All pulleys and wheel collets fit to standard taper lock shafts.



B6062 Speed Chart

Diameter of Wheel	Wheel R.P.M.	Pulley Motor	Pulley on Spindle	Belt Used
8 to 6 1/2	2,840	3 1/2	4 1/4	5M775
6 1/2 to 5 1/2	3,450	2 3/4	2 3/4	5M710
5 1/2 to 4 1/2	4,190	4 1/4	3 1/2	5M775
4 1/2 to 3 1/2	5,330	4 1/4	2 3/4	5M750

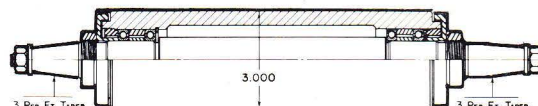
Accessories

See page 20



Quill Assembly B6062AB

Quill Assembly drawing showing bearing detail.



DAKOTA

B6060

**B6060M
B6060H**

**B6060B
B6060HB**

B6062

**B6062M
B6062H**

**B6062B
B6062HB**

Suffix

- M** Grinders equipped with metric-reading handwheel graduations.
- H** Grinders furnished with hydraulic power unit for table traverse.
- B** Manually operated Grinders furnished with anti-friction 'Ball-Track' table way system.
- HB** Hydraulic powered grinder with anti-friction ways.

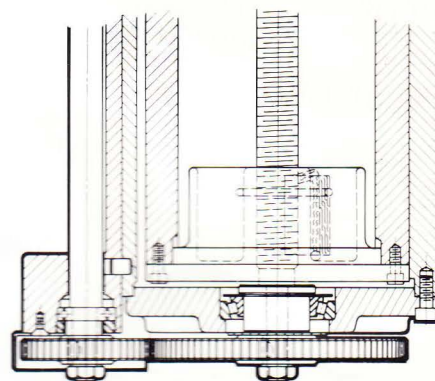
Unique Head Construction

The unique K.O. Lee Universal Grinding Head is standard with all Dakota Grinders. It's designed for cylindrical (internal or external) grinding, as well as tool sharpening, where varied grinding wheel speeds are required. The B6055HD Head is standard on the Heavy Duty Model, and provides the spindle strength needed for sustained heavy cylindrical or surface grinding activity.

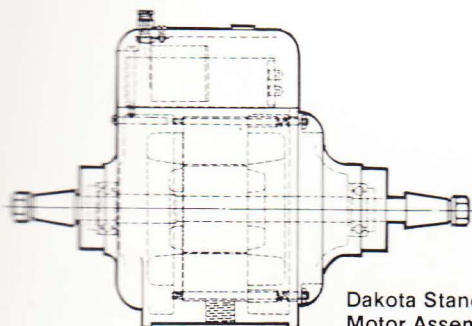
The wheel spindle is mounted on one sliding member and two swivels, each swivel capable of full 360° turn. With addition of a workhead, I.D., O.D., and face grinding can be accomplished with single chucking.

Each spindle is supported by the finest type of super precision ball bearings. Spindle is belt driven from either side of the head, by sliding the quill left or right.

Operating detail and column base (cross section).



6" Column construction, one-half of column is buried in housing, at maximum elevation.



Dakota Standard 2-Pole Motor Assembly B6223G with double taper-shaft extensions.

Typical Tilting Head Application —

Standard on all Dakota series, cupped and saucer wheels may be placed at the right end of the heavy duty quill.

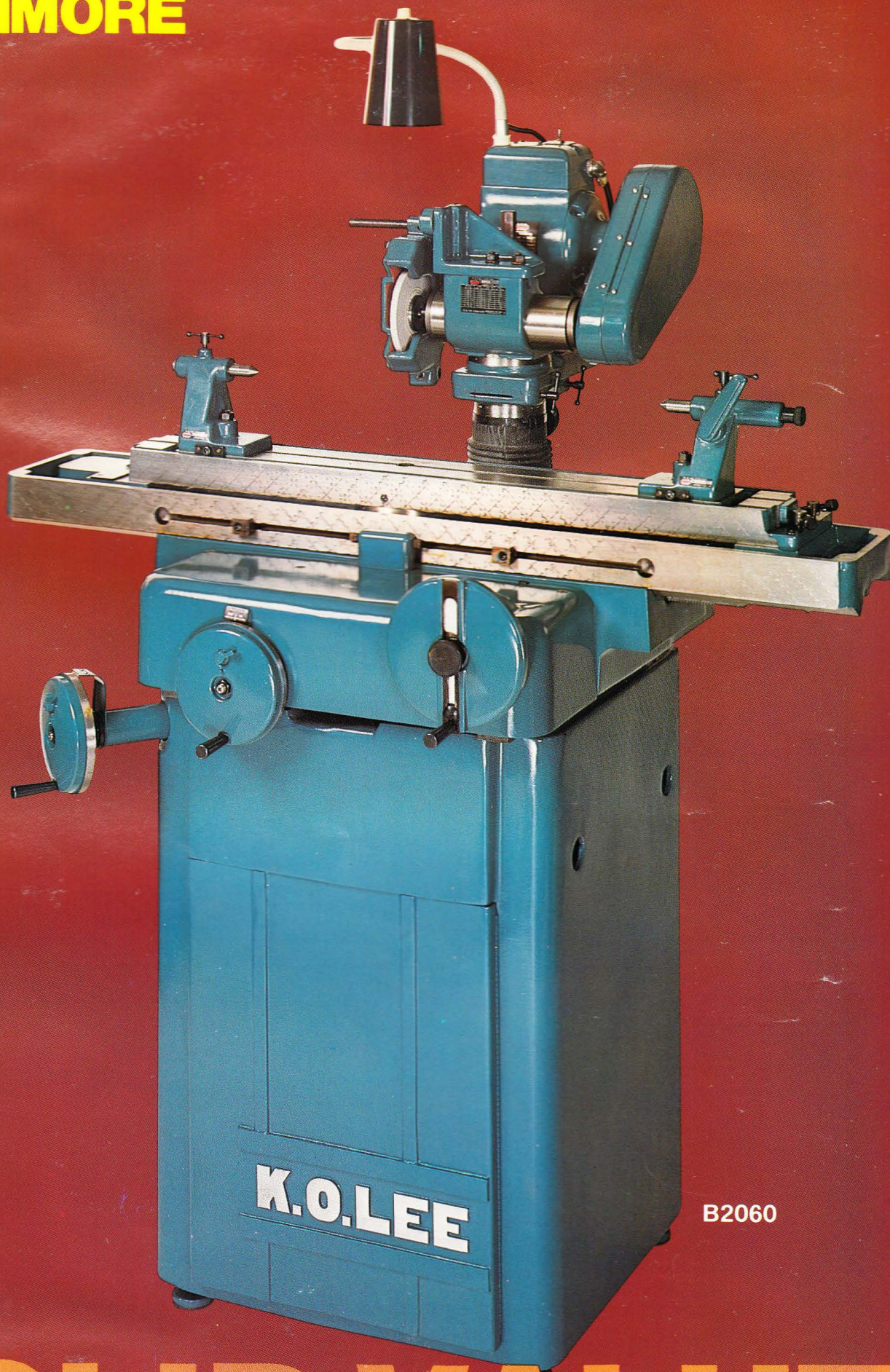


Standard Equipment—Dakota

 <p>B6040 Universal Tooth Rest</p>  <p>B940H Plain Tooth Rest</p>	 <p>B6027 Hex Wrench</p>	 <p>E1 Wheel Dresser</p>	 <p>B6039 Center Gauge</p>
 <p>B6022 Tail Stock Set</p>	 <p>B6040K Diamond Dresser</p>		

RUSHMORE

K.O. LEE UNIVERSAL GRINDERS



K.O. LEE

B2060

SOLID VALUE

Rushmore Series Grinders will do anything that machines costing two or three times more will do.

Their compactness makes it easier to get near the work, change set-ups, hold accuracy and turn out more work. Yet, you can still have 32" between centers on the table. Most jobs can be handled with single workhead chucking. The long swivel table allows room for most long reamers and other long work requirements.

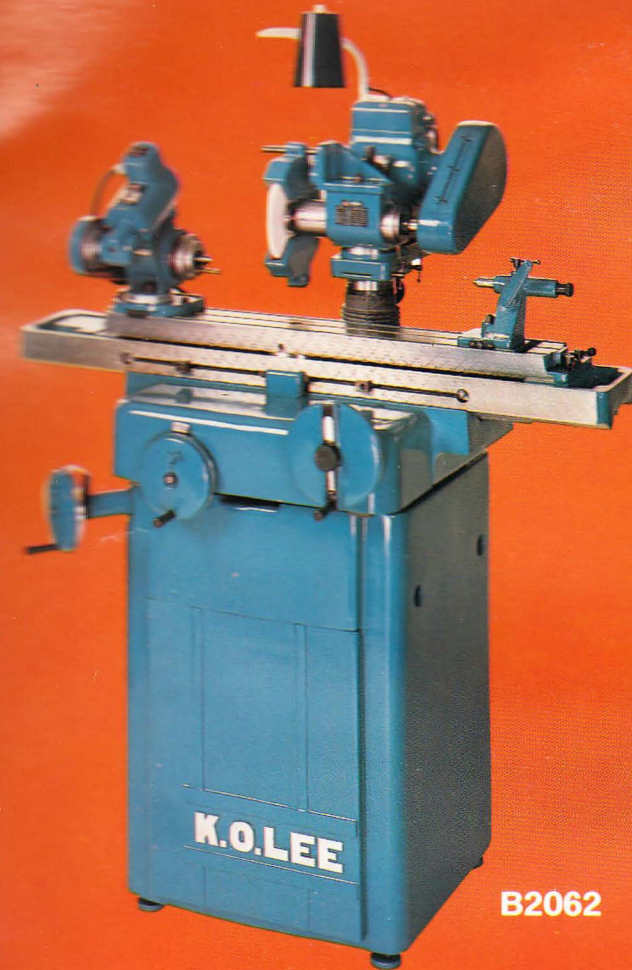
K.O. Lee workholding fixtures for I.D. and O.D. cylindrical grinding, tap grinding, radius grinding and many others, make the Rushmore series grinder so versatile, it's no wonder they're called "the busiest machine in the shop."

B2060—The standard model in the 2000 series. It features the multi-speed B955 Universal Grinding Head (see pages 18, 19).

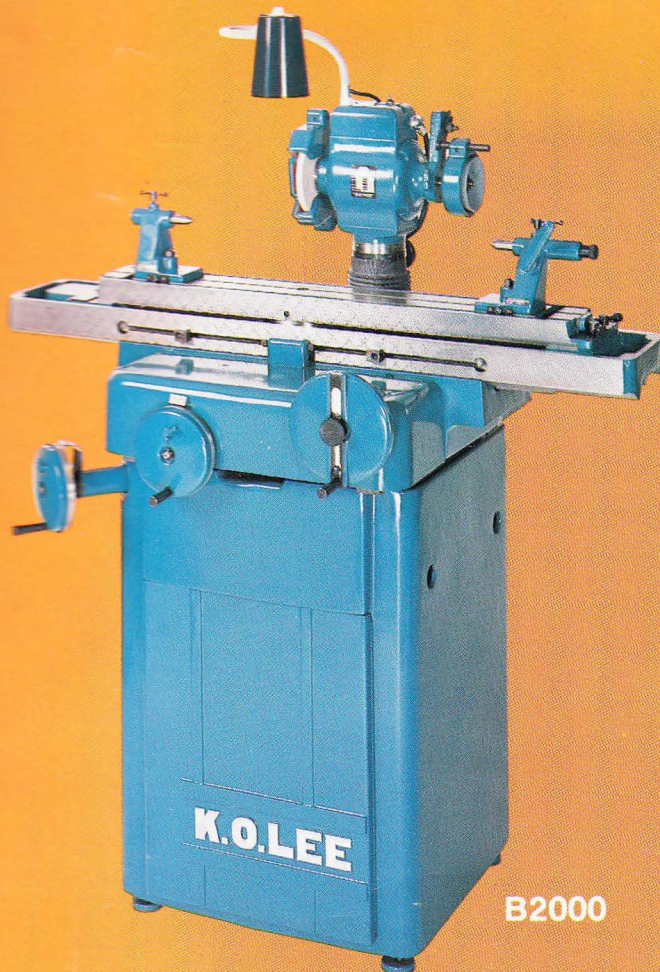
B2062—This model is identical to the B2060 except that the heavy duty grinding head has speeds capable of handling 7" and 8" diameter wheels. It is illustrated at left with the optional B943 motor driven workhead which makes it truly a universal grinder.

B2000—The tool and cutter grinder series with utility grinding head, which swivels 360° makes it possible to keep two wheels mounted ready for use at all times. This machine is designed to meet the restricted application of everyday cutter sharpening requirements of a typical tool room in a big plant, as well as a small job shop. The B955 or B955HD multi-speed Universal grinding head may be added at any time to convert this series to a Universal machine.

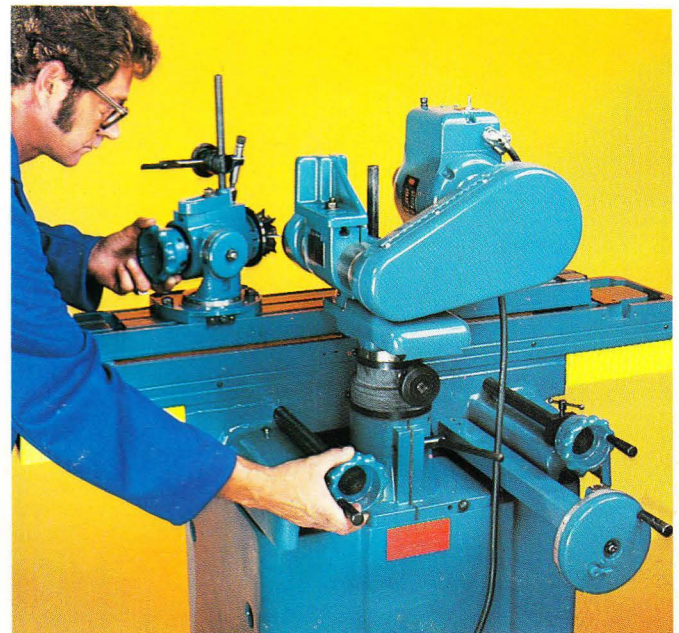
The model may be ordered as a basic tool and cutter grinder, B2000X, stripped of standard equipment, for special application.



B2062

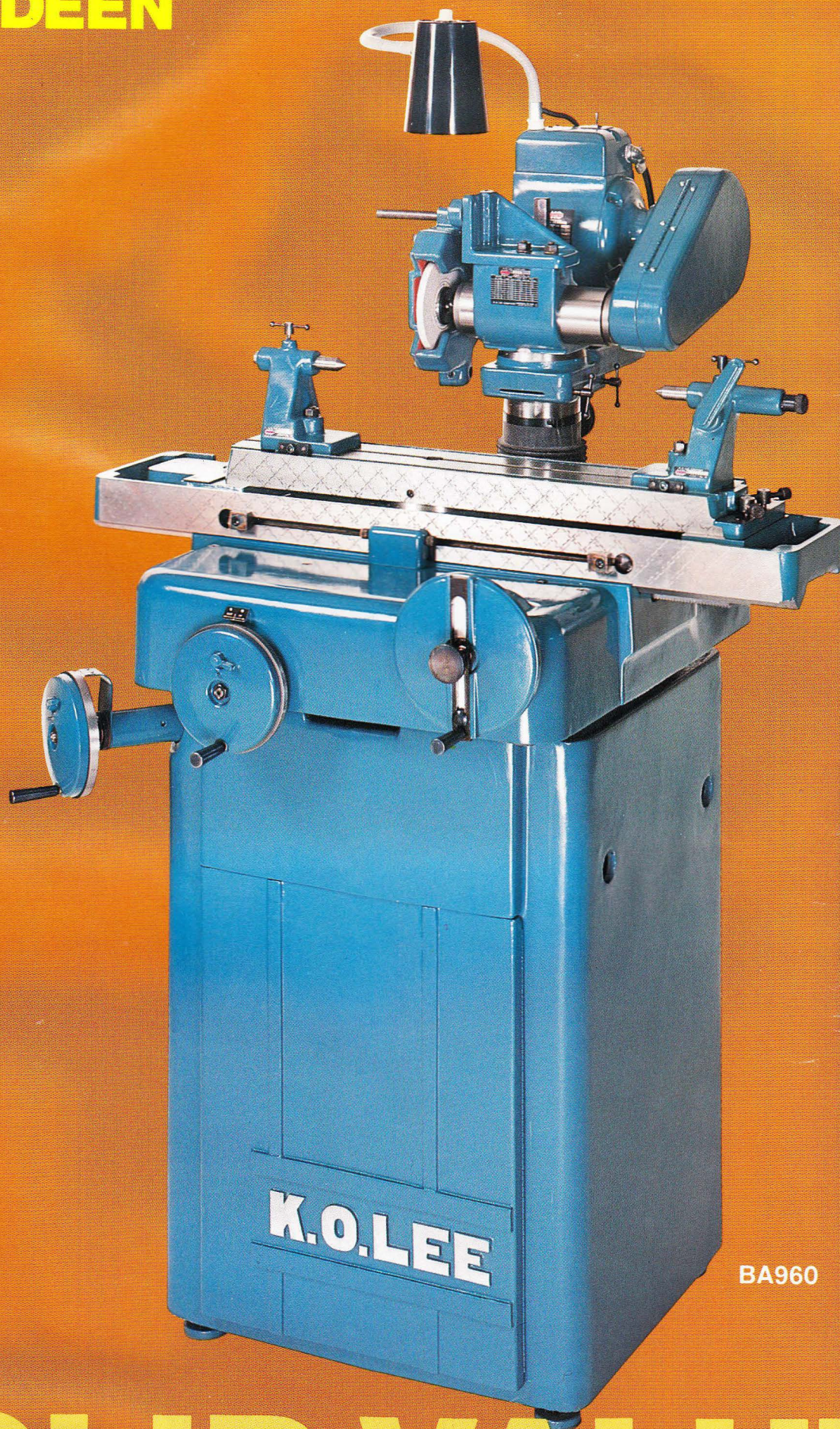


B2000



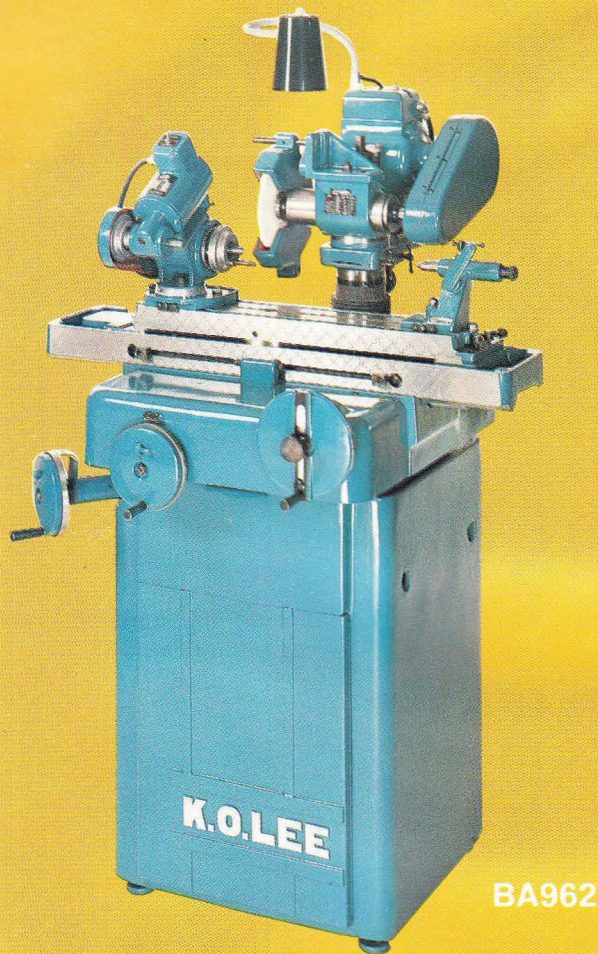
ABERDEEN

K.O. LEE UNIVERSAL GRINDERS

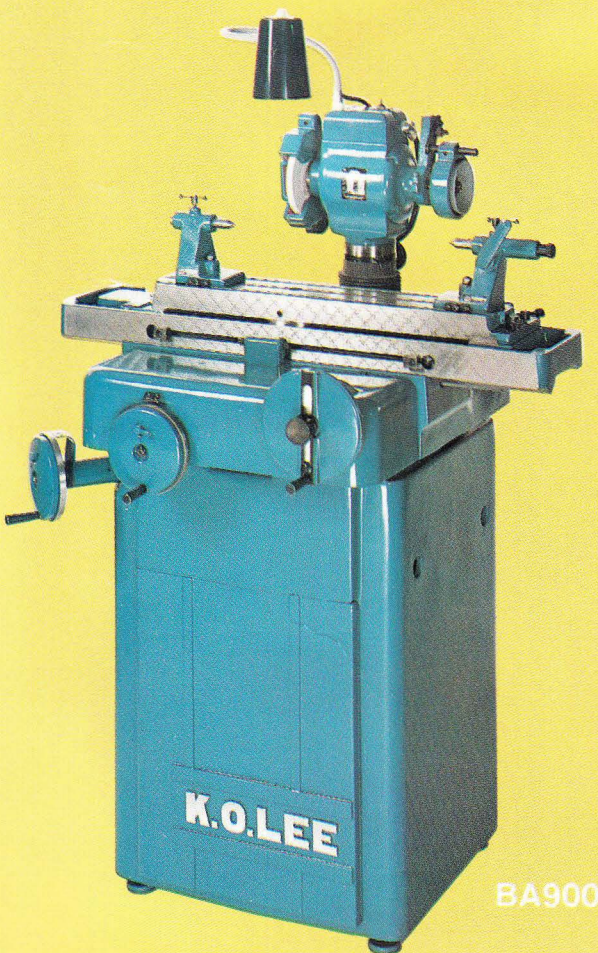


BA960

SOLID VALUE



BA962



BA900

The Aberdeen Series of grinders is the most popular line we've ever built.

Because they have the K.O. Lee Solid-Value Quality, the versatility needed in the tool rooms of big plants as well as job shops... and they are priced, in some cases, thousands of dollars below machines designed to do the same work. The model you select depends on your own individual thinking and on the size, variety and volume of work you run.

When you compare K.O. Lee grinders with any other — qualitywise and pricewise — you'll see the value. Ask the owner who has one!

BA960—The standard model in the Aberdeen series features the high speed B955 Universal grinding head, with spindle speeds to 18,400 R.P.M. You have the versatility to maintain standard cutting tools and most milling machine cutters, plus the capability of handling I.D. and O.D. cylindrical grinding as required by the typical shop.

BA962—This machine is identical to the BA960 except that the heavy duty grinding head B955HD is furnished for heavy duty cutter sharpening, as well as continuous cylindrical grinding. The unit is illustrated with the optional B943 motor driven workhead, making it one of the most popular Universal grinders in the K.O. Lee line.

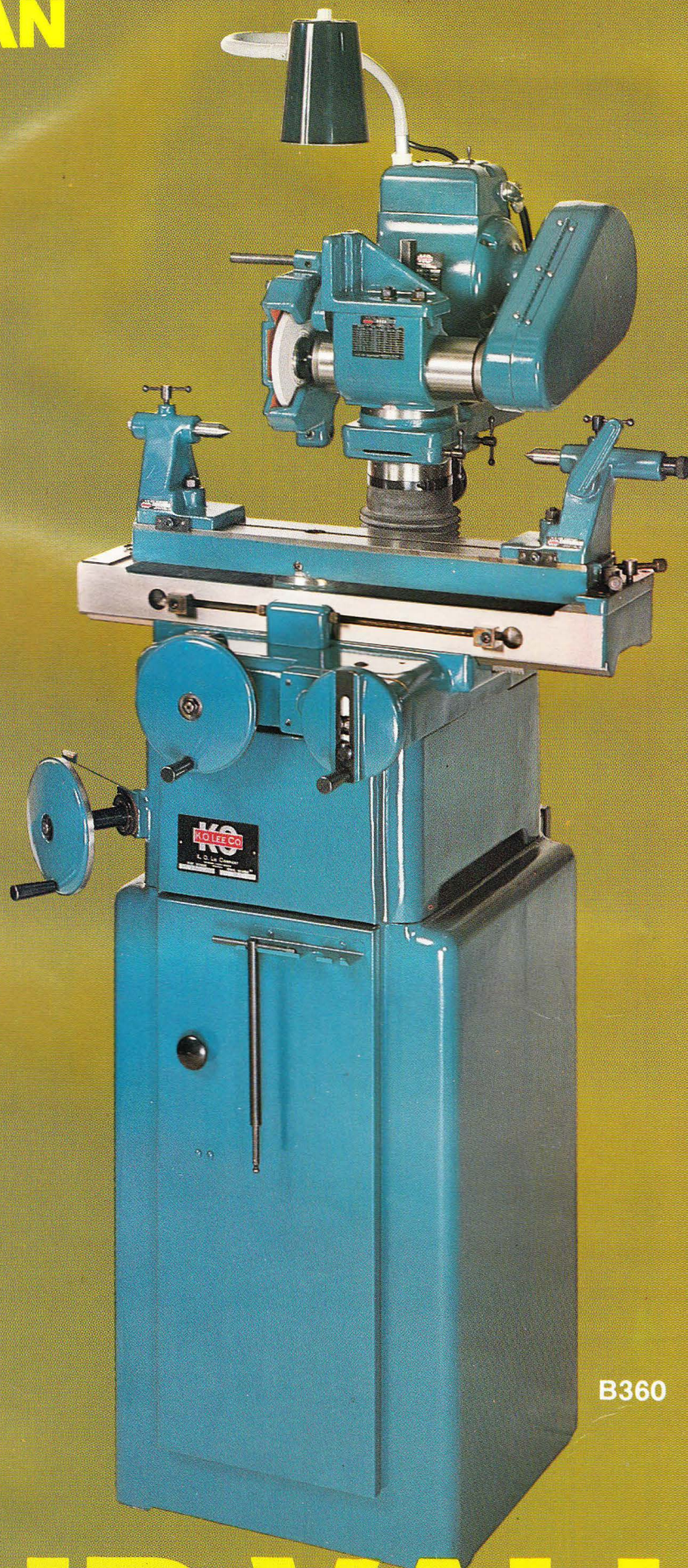
BA900—The tool and cutter model with standard utility grinding head, is ready to be tooled to suit your immediate grinding needs. Add the B955 or B955HD multi-speed grinding head at any time in the future to make this machine into a Universal grinder.

For special single purpose application, order this series as the basic grinder, BA900X. Here is a machine that has the size and versatility to handle most tool sharpening operations.



PLAINSMAN

K.O. LEE UNIVERSAL GRINDERS

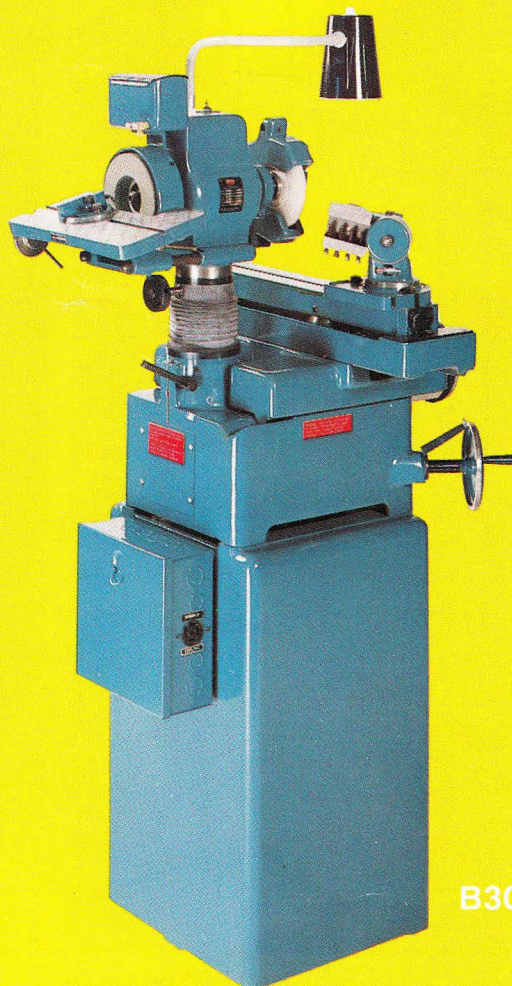


B360

SOLID VALUE



B300



B300X

The Plainsman

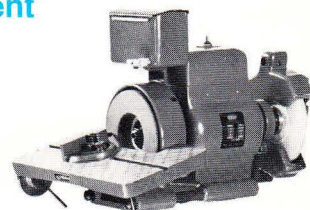
The Plainsman series is ideal for a shop that has a smaller size and volume of work, or repetitive jobs that require a special set-up to be maintained on the grinder for extended periods of time. Select one of these low cost grinders which offer most of the features of the other series, and then . . . add various workholding fixtures and accessories to fit your needs.

- B360** —The Universal model in the Plainsman series is featured at left with a Universal grinding head. Complete details about the standard equipment supplied with the machine and speed charts for the grinding heads are contained on pages 18 and 19.
- B300** —The most popular tool and cutter grinder in this series. It is supplied with the utility grinding head as standard equipment.
- B300X**—The basic tool and cutter grinder shown here has the optional B945 tilting table attachment for single point and carbide lathe tool grinding. It is also shown with optional B989 Universal workholding fixture for holding tools at compound angles relative to a cup or saucer wheel.

It makes a fine, low cost machine—less most standard equipment of the tool and cutter grinder series—and gets a lot of work out for you.

Tilting Table Attachment

This B945 table provides accurate settings to any angle from horizontal to 20° below, using the eccentric wheel at the side. Rough and finish grinding on conventional single point, carbide tipped tools and high speed steel cutting tools may be performed with this attachment. Provision is made in the protractor to accommodate diamond screw for dressing wheel. After rapidly hogging off metal by an alternate grinding procedure, accurate grinding of double angles is essential for obtaining fine finishes. All of these operations and many more can be accomplished with this tilting table.



B945—Standard Equipment

A267LT Tube, A268T Tool Bit Holder for Tools from $\frac{3}{16}$ " to $\frac{5}{16}$ " square (also available: A268TL Tool Bit Holder for Tools from $\frac{5}{16}$ " to $\frac{1}{2}$ " square), A646 Protractor with P176D Dia. Screw, A657 T-Slot Bolt, B845T Tilting Table Assembly, B856C Cover, B856G Tank, B945B Bracket, B945GB Wheel Guard, R56 Wrench, RV6NH100 6" x 1½" x $\frac{5}{8}$ " Silicon Carbide Recessed Grinding Wheel, S894 Hex Wrench.

The table, measuring 10" x 14" may be installed on any K.O. Lee grinder. A mounting bracket is required for use on all grinders.

- B945B**—Bracket adapts the table to Models B300, B300X, BA900, BA900X, B2000, and B2000X grinders.
- B945C**—Bracket adapts the table to Models B360, BA960, and B2060 grinders.

Universal Grinding Heads

Universal Grinding Heads

The B955 Universal Grinding Head is standard on B360, BA960 and B2060 grinders. (Also can be purchased separately for any other B300, BA900 or B2000 series grinder. See grinder price list for ordering detail.) It's designed for cylindrical, internal or external grinding where various grinding wheel speeds are required. B955HD Head is standard on all Heavy Duty Models. (BA962, and B2062).

The grinding head assembly is mounted on one sliding member and two swivels, each swivel capable of full 360° turn. With the addition of a B943 Work Head, I.D., O.D., and face grinding can be accomplished with a single chucking.

The cartridge spindles are easily removed. Spindles are belt driven from either side of the motor shaft.

Wheel arbors lock into internal (or external) shaft tapers.

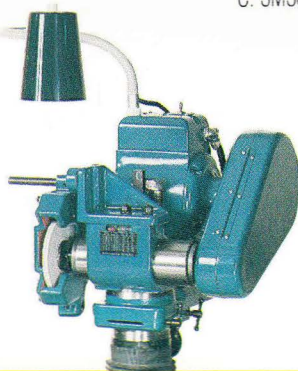
High Speed B955

Quill Assembly, ½ H.P. Motor and light fixture are part of each K. O. Lee Universal Grinder Head.

Grinding Head Speeds

Dia. of Wheel (in.)	Wheel R.P.M.	Motor Pulley Dia. (in.)	Spindle Pulley Dia. (in.)	Belt Used
6 to 5	3,450	3%	3%	(A)
5 to 4	4,600	4½	3%	(B)
4 to 3	5,820	3%	2	(C)
3 to 2	7,760	4½	2	(A)
2 to 1½	10,350	6	2	(B)
1½ to 1	13,800	6	1½	(B)
1 to ¾	16,560	6	1¼	(B)
¾ to ½	18,400	6	1½	(B)

Belt Code:
A: 5M615
B: 5M670
C: 5M560



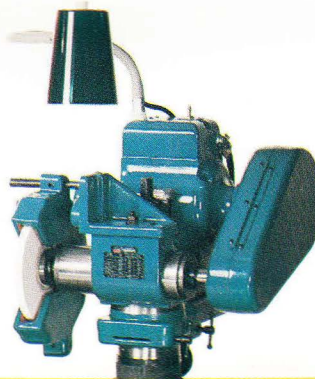
Heavy Duty B955HD

The Heavy Duty Quill Assembly, ½ H.P. Motor and light fixture, are part of the Heavy Duty Universal Grinding Head.

Grinding Head Speeds

Dia. of Wheel (in.)	Wheel R.P.M.	Motor Pulley Dia. (in.)	Spindle Pulley Dia. (in.)	Belt Used
	1,150	2	6	(B)
	2,580	3%	4½	(B)
7 to 5½	3,450	3%	3%	(A)
5½ to 4	4,600	4½	3%	(B)
4 to 3	6,530	4½	2%	(A)
3 to 2½	7,760	4½	2	(A)

Belt Code:
A: 5M615
B: 5M670



Utility

The standard Grinding Head with Tool & Cutter and Basic Grinder Series.

Utility

H.P.	R.P.M.
½	3,450
Optional	
1	3,450
2	3,450
3	3,450



RUSHMORE

B2060

B2060M B2060B
B2060H B2060HB

B2062

B2062M B2062B
B2062H B2062HB

B2000

B2000M B2000B
B2000H B2000HB
B2000X

ABERDEEN

BA960

BA960M BA960B
BA960H BA960HB

BA962

BA962M BA962HB
BA962H BA962B

BA900

BA900M BA900B
BA900H BA900HB
BA900X

PLAINSMAN

B360

B360M

B300

B300M B300X

Suffix

- M** Grinders equipped with metric-reading hand wheel graduations.
- H** Grinders furnished with hydraulic power unit for table traverse.
- B** Manually operated Grinders furnished with anti-friction 'Ball-Track' table way system.
- HB** Hydraulic powered grinder with anti-friction ways.
- X** Basic Tool & Cutter machine with single speed utility grinding head, only. Includes only that standard equipment shown on opposite page.

Standard Equipment and Spindles of Heads

High Speed Grinding Head

See page 21



Quill Assembly B6055B

High Speed Grinding Head Spindle has 2 class 7 precision ball bearings under pre-load, allowing speeds as high as 20,000 RPM.



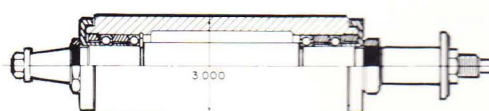
Heavy Duty Grinding Head

See page 21



Quill Assembly S6055CL

Heavy Duty Grinding Head Spindles have 2 duplex class 7 matched bearings with a pre-load for rugged durability.



Universal Grinding Head (without belt guard). Handwheel provides easy belt adjustment.

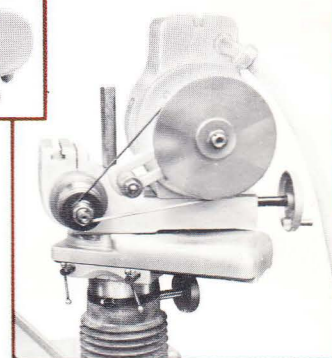
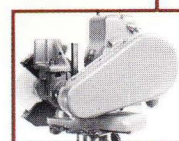
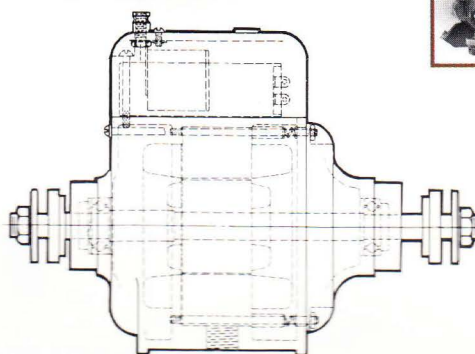
Standard Equipment and Accessories

Group A — (Accessories page 21)
B2060, B2062, BA960, BA962, B360

Groups A, B and C
B2000, BA900, B300

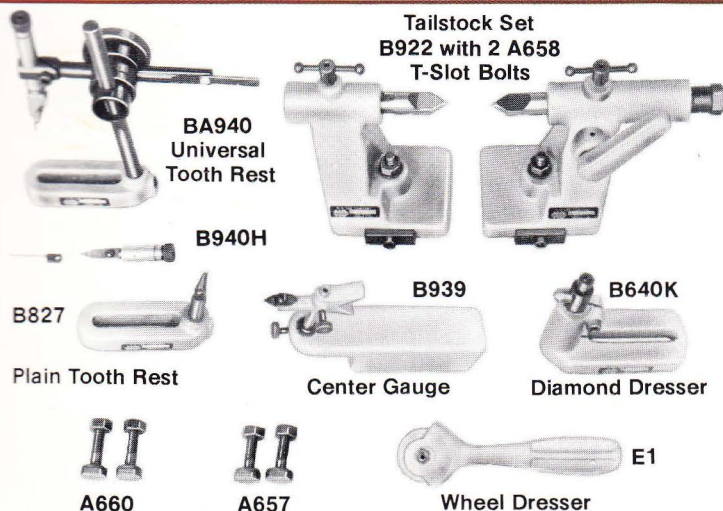
Group C
B2000X, BA900X, B300X

Utility Head Motor



Note quick release eccentric shaft at rear of column for locking head.

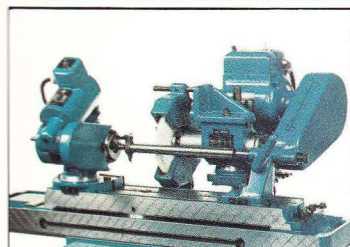
Group A



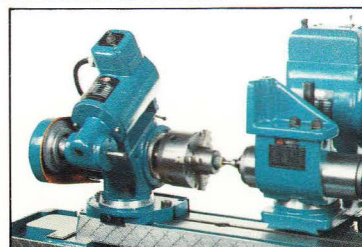
Group B



Group C






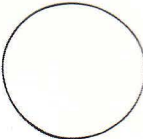













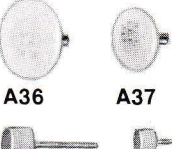


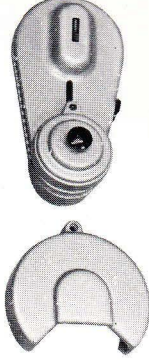
O.D. Grinding between centers.
Typical I.D. grinding set-up on universal machine.



Parts for above accessories are shown in Fixture Parts List Form FPL.

Dakota Grinding Heads

B6055 and B6055 HD Standard Equipment

 <p>5M 710 (28") 5M 750 (29") 5M 775 (30") V-Belts</p>	 <p>SV6GM60 Saucer Wheel CV4NM60 Cup Wheel</p>	 <p>B6055H2 (4 1/4") B6055H1 (3 1/2") B6055H4 (2 3/4") V-Pulleys</p>	 <p>5M800 (31") V-Belt</p>	 <p>PR6AM70 Cut-off Wheel PV5FH60 Straight Wheel</p>	 <p>B6055C Collect Chuck Assembly</p>
 <p>B246D 6" Wheel Guard</p>	 <p>B855W B936W B6028 Wrenches</p>	 <p>B6060GA Arm (B6055) B6060GAR Arm (B6055HD) B6060GSB Spacer B6060GT Stud B6060GW Washer</p>	 <p>B960G Belt Guard</p>	 <p>A 32 Cup Wheel</p>	 <p>B6055JL 1/4" B6055JS 1/8" Wheel Arbor</p>
 <p>B246C 4" Wheel Guard</p>	 <p>B936P Wheel Puller</p>	 <p>B6060GT Stud B6060GW Washer B6055PC Dovetail Clamp</p>	 <p>B628 Wrench</p>	 <p>B6055H3 (6 1/4") B6055H5 (2 3/4") B6055H6 (2") B6055H7 (1 1/2") B6055H8 (1 1/4") V-Pulleys</p>	 <p>A36 A37 W194 W184 W163 W162 W160 Mounted Wheels</p>
 <p>B246E 8" Wheel Guard</p>	 <p>B936C Collet</p>	 <p>B6062G Belt Guard B6062 MR Special Screw</p>	<div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><div><div></div><div></div></div><d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Multi-Speed Grinding Heads

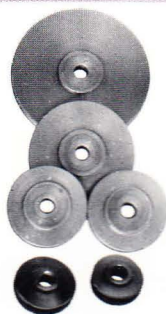
B955 and B955HD Standard Equipment



5M560(22")
5M615(24")
5M670(26")
5M710(28")
V-Belts



B246C 4"
Wheel Guard



B2055H3(6")
B2055H2(4 1/2")
B2055H1(3 3/8") 2
B2055H5(2 3/8")
B2055H6(2")
V-Pulleys



B2055H7(1 1/2")
B2055H8(1 1/4")
B2055H9(1 1/8")
V-Pulleys



PV5FH60
Straight Wheel
PR6AH70
Cut-off Wheel



B960G
Belt Guard



B246D 6"
Wheel Guard



B955BT
Bracket for
Wheel Guard



SV6GM60
Saucer Wheel
CV4NM60
Cup Wheel



A 32
Cup Wheel



B855F 5/8"
Pulley & Wheel
Arbor Assembly

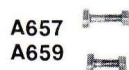


B855W
B628
S894
Wrenches

(S891 on
Hydraulic
Models only.)



A609A
T-Slot Arm



A657
A659
T-Slot Bolts



B955PC
Dovetail Clamp



A36



A37



W194



W184



W163



W162



W160

Mounted Wheels



B780C
Collet Chuck
Assembly with
B780CD 1/8" and
B780CE 1/4" Collets



B780J (5-40)
B780K (1/4"-28)
Wheel Arbors



B246E 8"
Wheel Guard



B936P
Pulley



B936W
Wrench



PR8AM70
Cut-off Wheel
PV7GM60
Plain Wheel

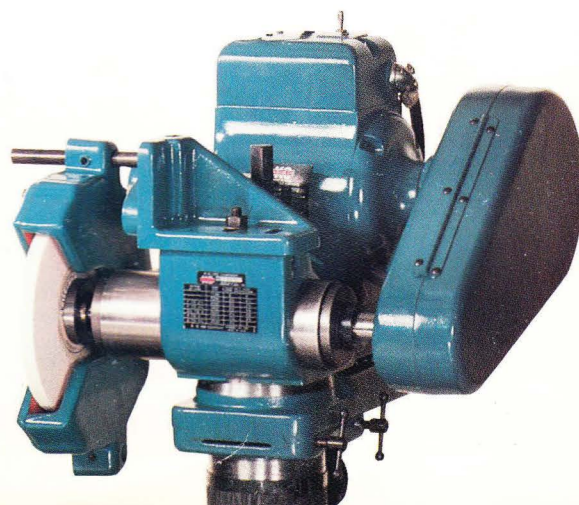


B936C
Collet (2)

B936CW
Washer

B936CN (Nut)
B936B (Body)
B936CS (Spacer)

B955 Equipment B955 HD Equipment



K.O. LEE Hydraulic-Powered Table Traverse

This option provides fast, uniform cylindrical grinding performance. Hydraulic table operation is available on all model series except the Plainsman. (Add suffix "H" to machine number.)

To maintain the extreme accuracy of K.O. Lee Grinders, the hydraulic pump mechanism is installed adjacent to the machine instead of within the base cavity... as this prevents heat buildup which adversely affects performance.



Parameters

- Longitudinal table speeds from 3/4 inch to 20 FPM. Special slow speed available on request.
- Gear pump with pressure relief (120 lbs.)
- 1/2 H.P. fan cooled motor.
- Pressurized filtered hydraulic fluid lubricates table ways.

All Controls conveniently located on front of machines:

1. Hydraulic power can be quickly disengaged for manual operation.
2. Separate control for variable table speeds, independent of the start/stop control station.
3. Independent start/stop control does not affect table speed.
4. Adjustable control for table reversal dwell.
5. Table Reverse Control Arm can be actuated automatically by table stops, or manually.
6. Special table stops can allow table to stop at fixed points every time, and reverse.

Leematic Programmable Indexer for Cylindrical Production Grinding to "Tenths"!

The Indexer provides completely automatic operation which frees the operator for other work. Use of small infeeds for each cut reduces wheel wear. More pieces can be ground between dressings, and more accurately. The Dakota Universal type grinder may be factory fitted with this automatic infeed system for cylindrical grinding.

Solid state integrated circuit logic indexer controls a stepping motor. Drive is direct to crossfeed screw by timing belt eliminating gear lash. Motor and screw are electrically locked after each infeed increment assuring positive control and repeatability. Specify "S90C Leematic 10."

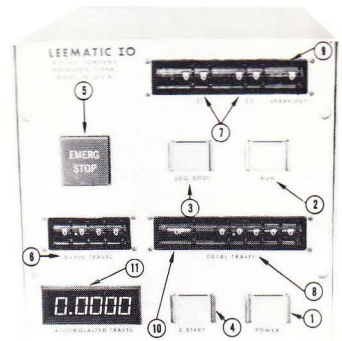


Features

- Automatic Infeed increments from .0001" to .0099". Feeds at each end of table reversal stroke. You set the amount, to the exact .0001".
- Stock removal cycle starts at the touch of a switch. Rapid travel of work to the wheel can be programmed into Total Dial. Rapid return to start-of-cycle position is built-in.
- Total stock removal is determined by final setting in Total Travel Dial, NOT by incremental setting or number of infeed strokes.
- 0-9 Sparkout Passes.
- .0001" 'jog' and 'run' buttons make it easy to position grinding wheel in relation to work, or compensate for wheel dress.
- To operate grinder without Leematic 10 as standard machine, simply turn power switch off. Motor then becomes electrically disconnected from indexer, and handwheel turns easily. Crossfeed drive pulley is quickly disengaged from feed screw by quick release clutch mechanism.

S90C Leematic 10 Programmable Indexer

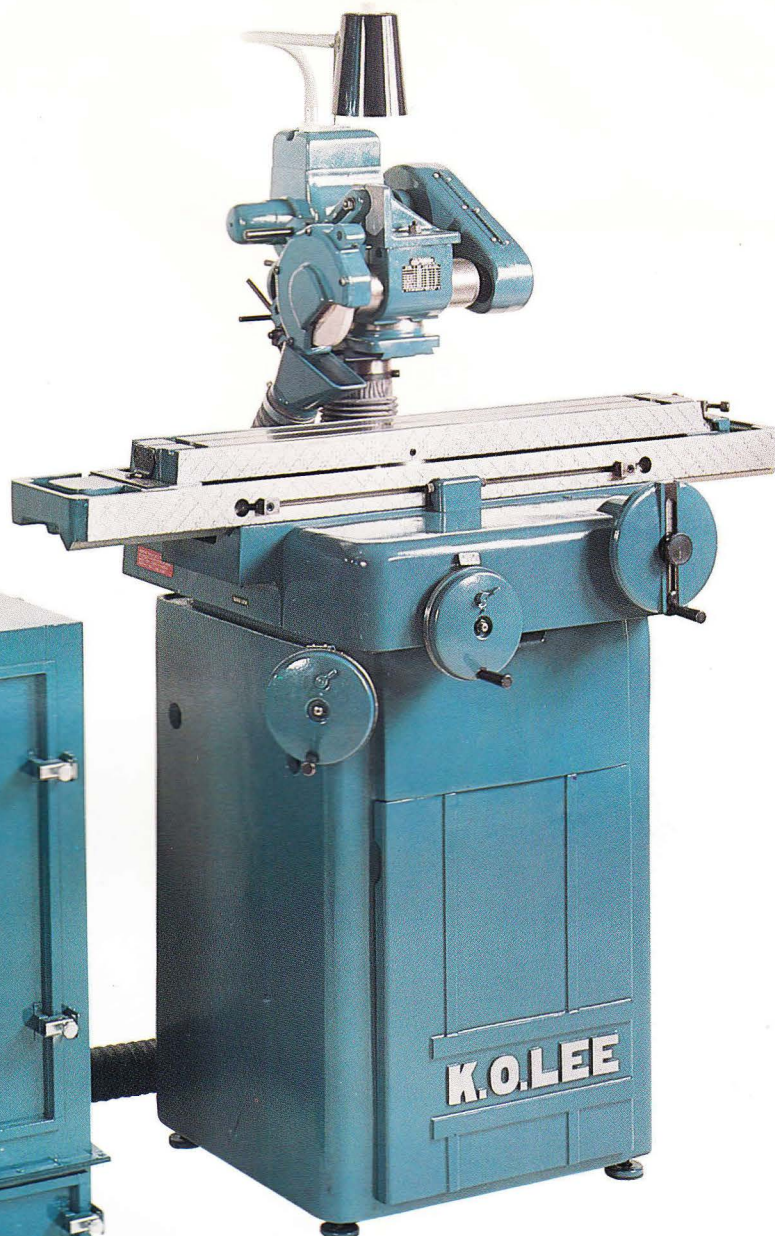
1. **POWER:** Press on, red lighted switch, press off.
2. **RUN:** When pressed, wheel moves under rapid travel to or from the work (in or out). Rate of Speed: Approximately 1 1/2" per minute.
3. **JOG:** Each press of button, one step (.0001") (in or out).
4. **START:** Program start. Rapid travel, Z1 and Z2 up to Total; Sparkout; return to Start position. Green lighted switch indicates program in operation.
5. **EMERGENCY STOP:** Stops infeed cycle, returns wheel to Start position.
6. **RAPID TRAVEL:** Programs advance wheel travel to work prior to Z1 and Z2 infeed.
7. **Z1 and Z2:** Infeed. Increment steps at each end of longitudinal work table or saddle crossfeed (.00)01" to (.00)99". Any combination in .0001".
8. **TOTAL TRAVEL:** Total of Rapid Travel plus stock removal desired.



9. **SPARKOUT:** Controls number of times work is to pass the wheel without infeed (0-9).
10. **IN:** Run in. Rapid Travel and Stepped infeed, in. Jog in. **OUT:** Travel out while setting cycle, using Run button or Jog button.
11. **ACCUMULATED TRAVEL:** Monitors Indexer output to Drive Motor. Grinding completed when this equals preset Total Travel.

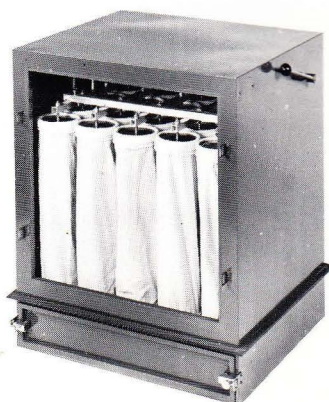
Dust Collector B975

The K.O. Lee dust collector eliminates the problem of dust and grinding waste buildup. This powerful system provides a cleaner work environment to meet the new work standards established by OSHA. Easy to service, routine maintenance will insure a healthier work station atmosphere for the grinder operator.



Features

- Space saving, low profile design allows collector to be placed adjacent to any machine. Since all grinder tables will pass over it.
- Direct flow of air from bottom to top (inside of bags) keeps the tubular collector bags (20) inflated, and proper spacing keeps them separated. Dust is deposited evenly throughout the entire surface of each bag.
- Shaker handle, located outside the cabinet, shakes the collector bags free of accumulated dust into the dust box below. The dust box container slides out to the front, and is easily removed and emptied.
- Bags are easily and inexpensively replaced when necessary, and are made of flame retardant cotton. Access to bag area is through a front removable panel. Total fabric area is 37.7 square feet.



- 1/2 H.P. motor is located behind the cabinet, for longer life. Available in 115/230 volt, single phase; or 208/230/460 volt, 3 phase, 50-60 Hz.
- Static suction power is 500 CFM at 4 inches W.G. using one 3 inch diameter hose. Unit has been designed to meet OSHA standards. Can provide service for multiple machines on request. Shipping wt.: 150 lbs; floor space: 34"W, 34"H, 37" Deep.

Standard Equipment

A246B Wheel Guard Bracket, A246BS Shaft, B935NC Clamp-Plain, B935ND Clamp-threaded, 3" Hose-Clamp, B935NR Pivot Stud, B975N Nozzle, B975K120 10 ft., 3" Heavy Duty Flex. Hose standard (other lengths available), 1/2 H.P. Motor, 37A Dust Collector.

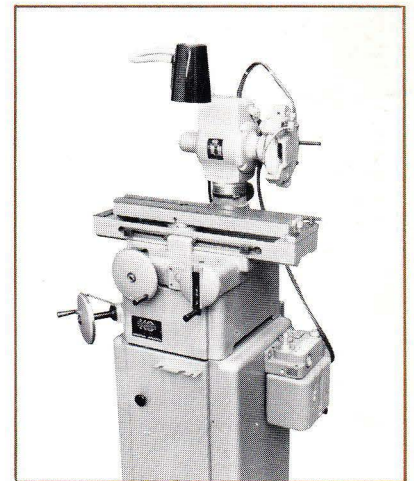
Coolant Attachments

For sustained cylindrical grinding (high or low speed), we recommend the installation of our standard coolant attachment. Work finish is better and accuracy is more easily maintained. This work-cooling optional accessory includes a coolant pump and tank, coolant lines, special wheel guard, and table splash guards.



Spray Mist Coolant

Our Bijur spray mist accessory can be attached to any tool grinder where full flow coolant is not required. Specify B935SM.



Power Supply Choice

115V, 1 phase 60/50 Hertz
230V, 1 phase 60/50 Hertz
208V, 3 phase 60/50 Hertz
230/460V, 3 phase 60/50 Hertz

Order by Catalog Number:

Flood Coolant Tank Options	Grinder Series			
	BA900	B2000	B6060	B6062
Std. 7 Gallon Tank Mtd on Machine Base	B935	B2035	B6035	B6035-HD
15 Gallon Tank with Casters	B935-15	B2035-15	B6035-15	B6035-15HD
15 Gallon Replacement Tank	S612-233	S612-233	S612-233	S612-233
Shipping Wt.	70	70	85	85

Dimensions

General Specifications

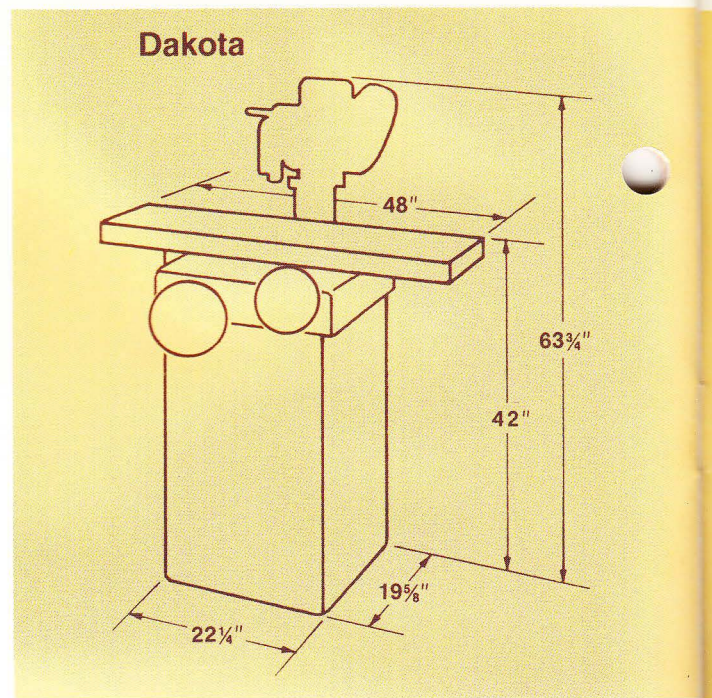
Floor Space Required for Operation:

	Wide	Deep	Max Height	Sub-Table Length
Dakota	68" x 46"		63-3/4"	48"
Rushmore	68" x 40"		63-3/4"	48"
Aberdeen	52" x 40"		63-3/4"	38"
Plainsman	37" x 32"		63-3/4"	26-1/4"

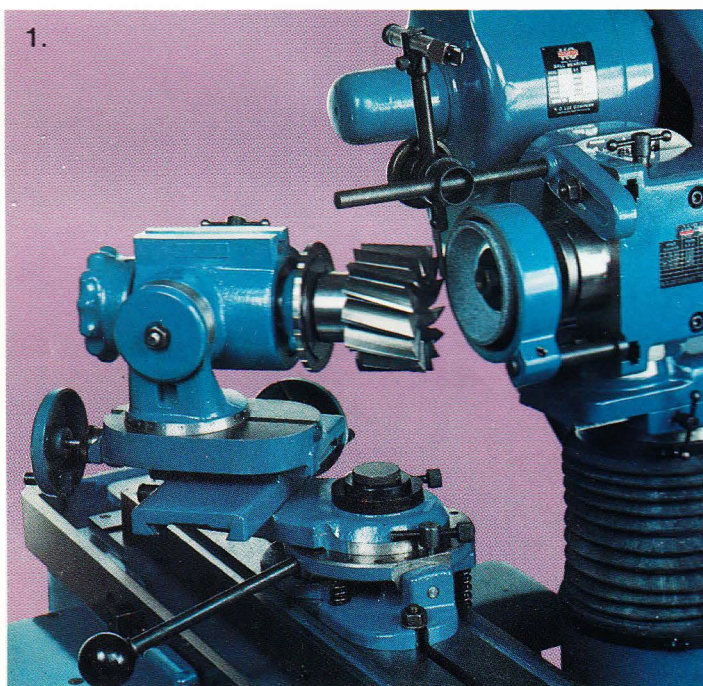
Shipping Data:

	Weight (Universal Grinder)	Weight (Tool and Cutter Grinder)	Volume (Export Packing)
Dakota	1530 lbs.	—	58 x 58 x 72"
Rushmore	1400 lbs.	1310 lbs.	58 x 58 x 72"
Aberdeen	1350 lbs.	1260 lbs.	58 x 58 x 72"
Plainsman	690 lbs.	620 lbs.	46 x 36 x 66"

Note: Add 150 lbs. for hydraulic system. Add approximately 550 lbs. for export packing all series, (except Plainsman, approx. 350 lbs.).

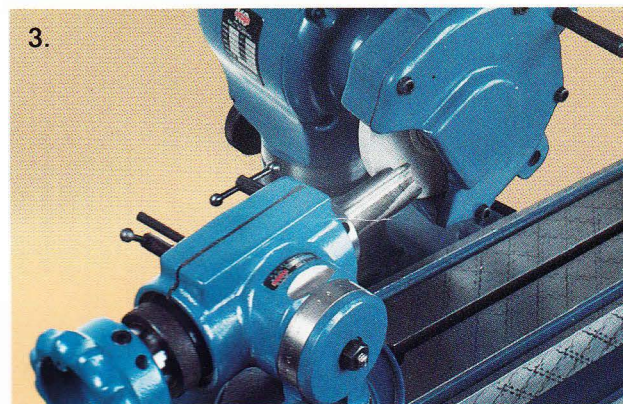


Versatility for Standard and Special Jobs

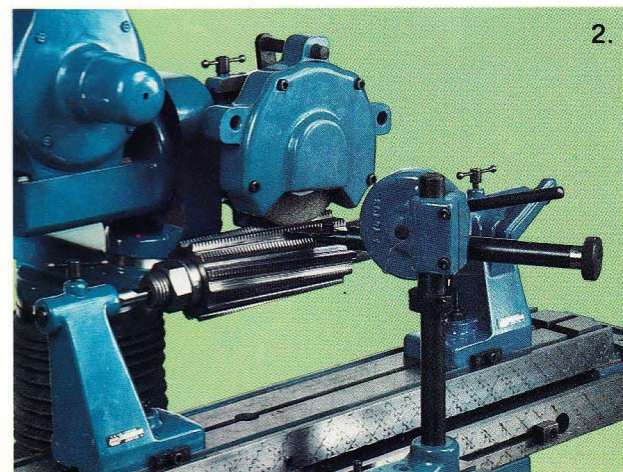


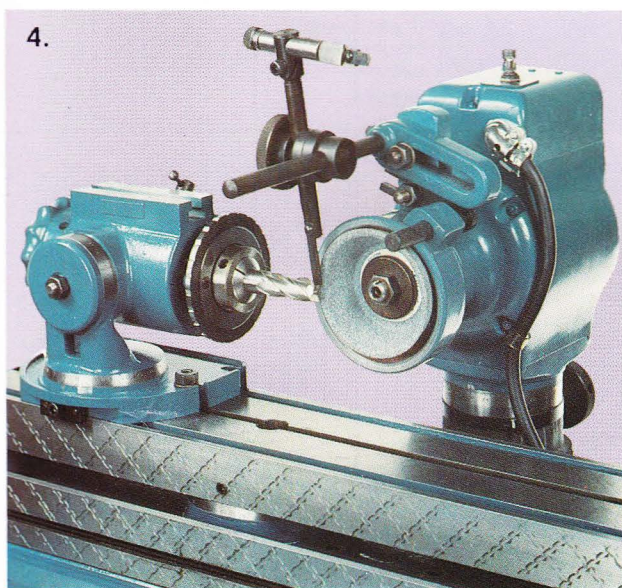
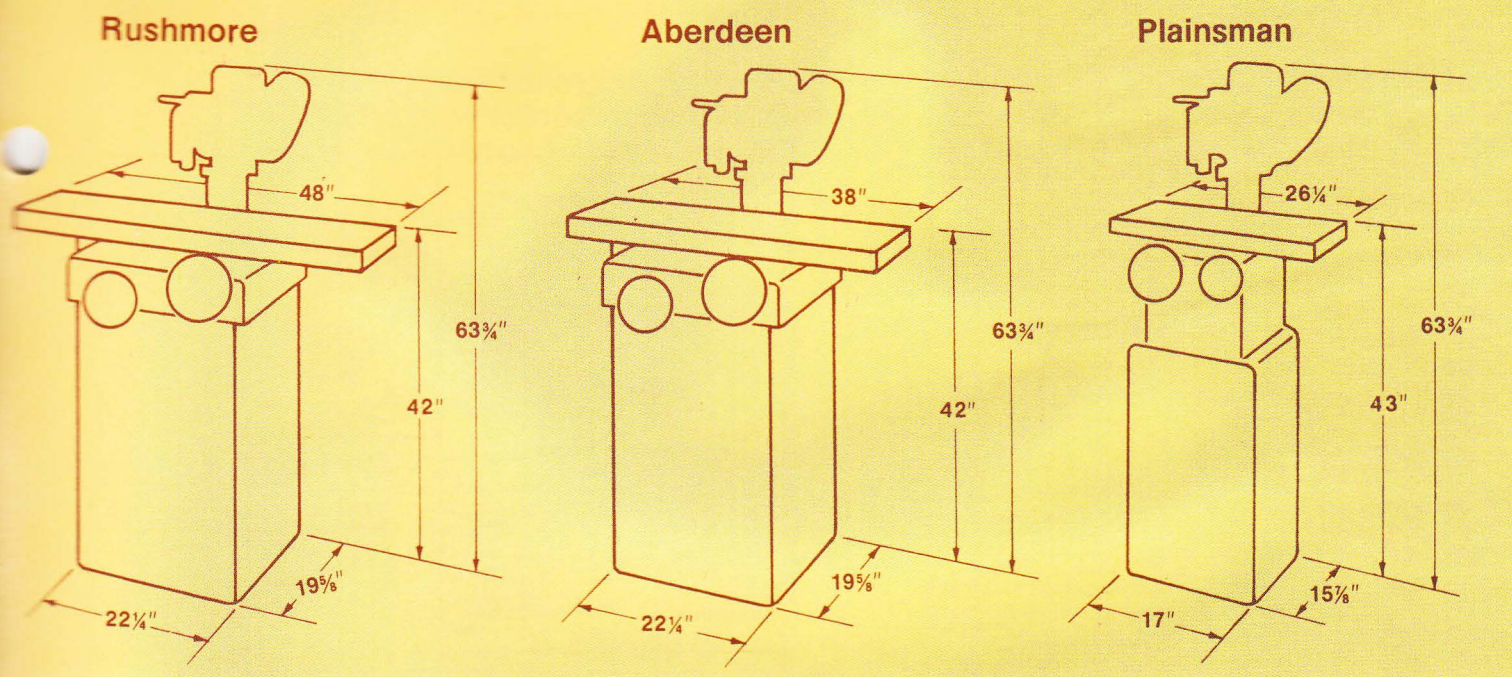
1. Concave or convex radius can be ground on shank mounted cutters using a BA986 Radial Grinding Fixture. Surface tangent to radius can be ground using longitudinal table feed.

2. Helical flute form cutter mounted on hob grinding arbor is sharpened between tailstocks using B1070 Spiral Grinding Fixture. Micrometer feed allows cutter to be advanced to wheel, without use of machine crossfeed.



3. The B947 Tap Grinding Fixture is a sturdy, compact unit built to accommodate taps from a No. 0 size to 2-1/2" in diameter. It is easily mounted and set up for taps having two to six flutes, and is adaptable to any make of tool grinder.





4. A straight shank end mill is being sharpened using a B942 workhead at the left end of the table (for a right hand end mill). The toothrest is mounted by means of a bracket secured above the grind wheel.
5. Reamers both solid and expandable can be sharpened on a K.O. Lee machine. This solid reamer is being sharpened using a cup wheel.
6. This is the method for sharpening a formed relieved cutter with "Zero Rake". Cutter is mounted between centers and crossfeed so that the teeth faces in the vertical plane can be ground.
7. Using the B982 air bearing fixture, large volumes of end mills and similar cutters can be effortlessly sharpened due to a hardened and ground work holding spindle which slides on two air-supported bearings. Grinder table remains fixed. The unique moving workholding spindle principle dispenses with the need for aligning the workhead with the table ways. Regardless of the angle of approach to the wheel, it is not possible to grind a taper by mistake.

